TECHLAW INC.

20 NORTH WACKER DRIVE, SUITE 1260, CHICAGO, IL 60606
PHONE: (312) 578-8900
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RZ2.R05035.01.EP.040

February 3, 1999

Mr. Michael Valentino
U.S. Environmental Protection Agency
Region 5 DE-8J
77 W. Jackson
Chicago, Illinois 60604

Reference: EPA Contract No. 68-W4-0006; EPA Work Assignment No. R05035; Techalloy Company, Inc.; EPA ID No. ILD005178975; Work Assignment Close-out

Dear Mr. Victorine:

Due to completion of the above referenced contract, all technical activities on the above referenced work assignment were completed on or before December 31, 1998. Attached to this letter is information related to the close-out of this work assignment. The attached lists have been prepared as part of the final work assignment and contract close-out process.

Attachment 1 provides a list of all interim and final deliverables generated under this work assignment. The original copy of each of these deliverables has, in the past, been submitted to the U.S. EPA Work Assignment Manager (EWAM). In addition, a copy has been, and will continue to be, maintained by TechLaw. However, all such copies will be removed from the active files in the near future and placed in storage. Therefore, if at this time you require additional copies of any of these deliverables for your files, please notify Mr. Todd Quillen, the TechLaw Work Assignment Manager (TWAM), within the next business week.

Attachment 2 is a list of all materials currently in TechLaw's possession which have been acquired by TechLaw or one of our subcontractors during the performance of the above referenced work assignment. These materials typically include work plans and reports submitted by regulated facilities and analytical data packages. In many cases, materials in TechLaw's possession are also contained in U.S. EPA files. There are three potential scenarios for the disposition of these materials. The first is that they be returned to you. The second is that the materials be destroyed/recycled by TechLaw. The third option is that the materials be held by TechLaw until the award of the successor REPA contract. If TechLaw is a successful bidder for that contract and you so request, we will then maintain the information for future use. Should TechLaw not be awarded a successor contract, all materials will be returned to you at that time without further discussion. Please notify Mr. Quillen, within the next business week as to which option you prefer.

A list of field logbooks generated during the performance of field oversight, sampling and/or split sampling under this work assignment is provided as Attachment 3. In addition, the actual field logbooks are being returned to you at this time.

The final Monthly Technical Report for this work assignment was submitted to U.S. EPA on January 20, 1999. Upon submittal of that Monthly Technical Report and resolution of any issues associated with the above, all administrative activities for this work assignment will have been completed.

Please do not hesitate to contact myself, or Mr. Quillen, should you have any questions.

Sincerely,

Patricia Brown-Derocher

Patricia Brown-Derocher
Regional Manager

cc: F. Norling, EPA Region 5, w/o attachment
W. Jordan, Central Files
T. Quillen
Chicago Central Files

ATTACHMENT 1

R05-035 (Techalloy Company, Inc.) DELIVERABLES

DCN	Document Title	Del. Date	
RZ2.R05035.01: ID.005	Review Draft RCRA Facility Investigation Report	12/22/95	
ID.010	Review Supplemental RFI, Off-Site Groundwater Report	5/1/96	
ID.012	Review, Revised RFI Report	5/10/96	
ID.014	RCRA Facility Investigation Report	7/26/96	
ID.016	Field Oversight Report	9/17/96	
ID.018	Review of CMS Work Plan	10/16/96	
ID.024	Draft Review Comments for 3/97 CMS report	5/27/97	
ID.025	CMS Report and Aquifer Performance Evaluation	6/19/97	
ID.028	CAMU Designation Request Review	7/11/97	
ID.032	Review of Expansion of Treatment System	12/5/97	

ATTACHMENT 2

R05-035 (Techalloy Company, Inc.)

LIST OF DOCUMENTS RELATED TO THE TECHALLOY CO. PROJECT (R05-035) IN TECHLAW'S POSSESSION THAT ARE THE PROPERTY OF EPA

Document Title	Date/Revision #	
Supplemental RCRA Facility Investigation Off-Site Groundwater Report	3/1/96	
CMS Addendum - CAMU Designation Request	6/1/97	
CMS Report	10/3/97, Rev.2	
Expansion of Groundwater Treatment System	11/18/97	
Results of Aquifer Performance Evaluation	5/8/97	
Supporting VOC Mass Calculations	May 1997	
Facsimile of raw pump test data from extraction well, MW-HBR, PZ-01 and Z-02 and recovery test	May 1997	
Interim Measures Final Design for Groundwater Treatment System	8/1/93	
RCRA Facility Investigation Final Report	3/96	
RCRA Facility Investigation Final Report	6/96	
RCRA Facility Investigation Draft Report	8/95	
Groundwater Treatment System Interim Measure	8/93	
CMS Work Plan	August 1996	
Facsimile of CMI Outline - Scope of Work	6/1/98	
CMS Report	3/1/97, Rev. 0	
Facsimile of TCLP Analytical Results of Soil Samples	7/7/97	
CMS Addendum - CAMU Designation Request	8/97, Rev. 1	
Response to Technical Evaluation of the Aquifer Performance	7/31/97	

ATTACHMENT 3

R05-035 (Techalloy Company, Inc.)
FIELD LOGBOOKS

Document Title	Date	DCN #/Date
Techalloy Field Log	1/23/96	N/A
Techalloy Field Log	9/6/96	ID.016 9/17/96

A

WESTON
MANAGERS DESIGNERS/CONSULTANTS

Roy F. Weston, Inc.
Suite 400
3 Hawthorn Parkway
Vernon Hills, Illinois 60061-1450
847-918-4000 • Fax 847-918-4055

8 April 1998

Mr. William Buller
U.S. Environmental Protection Agency - Region V
RCRA Enforcement Branch (HRE-8J)
77 West Jackson Boulevard
Chicago, Illinois 60604

Work Order No. 01989-031-001

Re: Techalloy Site
RCRA Closure Plan

Dear Mr. Buller:

The Techalloy Company on 23 March 1998 received a letter from the U.S. EPA requesting that Techalloy contact the IEPA and provide information pertinent to the Closure of three Solid Waste Management Units (SWMUs). On behalf of Techalloy, Roy F. Weston, Inc. (WESTON®) has submitted a hand-written comparison of the data collected in 1991 to the recent risk-based cleanup objectives determined as part of corrective action. These results indicated that concentrations detected in the samples were all below the cleanup objectives. The IEPA and WESTON discussed these results and the next steps required in obtaining closure. I have enclosed, for your review, the hand-written comparison of data to cleanup standards.

Kevin Lesko at the IEPA has requested that Techalloy revise the RCRA Closure Plan to include a comparison of the previously submitted data to the currently developed cleanup objectives. Also to be included within the plan are the deed restriction information and the other institutional controls, such as groundwater monitoring. This revised RCRA Closure plan will be submitted to the IEPA on 30 April 1998.

If you have any comments or questions regarding the progress of this project, please do not hesitate to call me at (847) 918-4002.

Very truly yours,

ROY F. WESTON, INC.

Carlos J. Serna, P.G.
Senior Project Manager

CJS/slr
Enclosure

cc: David Williams, Techalloy
Henry Lopes, Techalloy
Scott Carr, Techalloy
Jack Thorsen, WESTON
Kevin Lesko, IEPA

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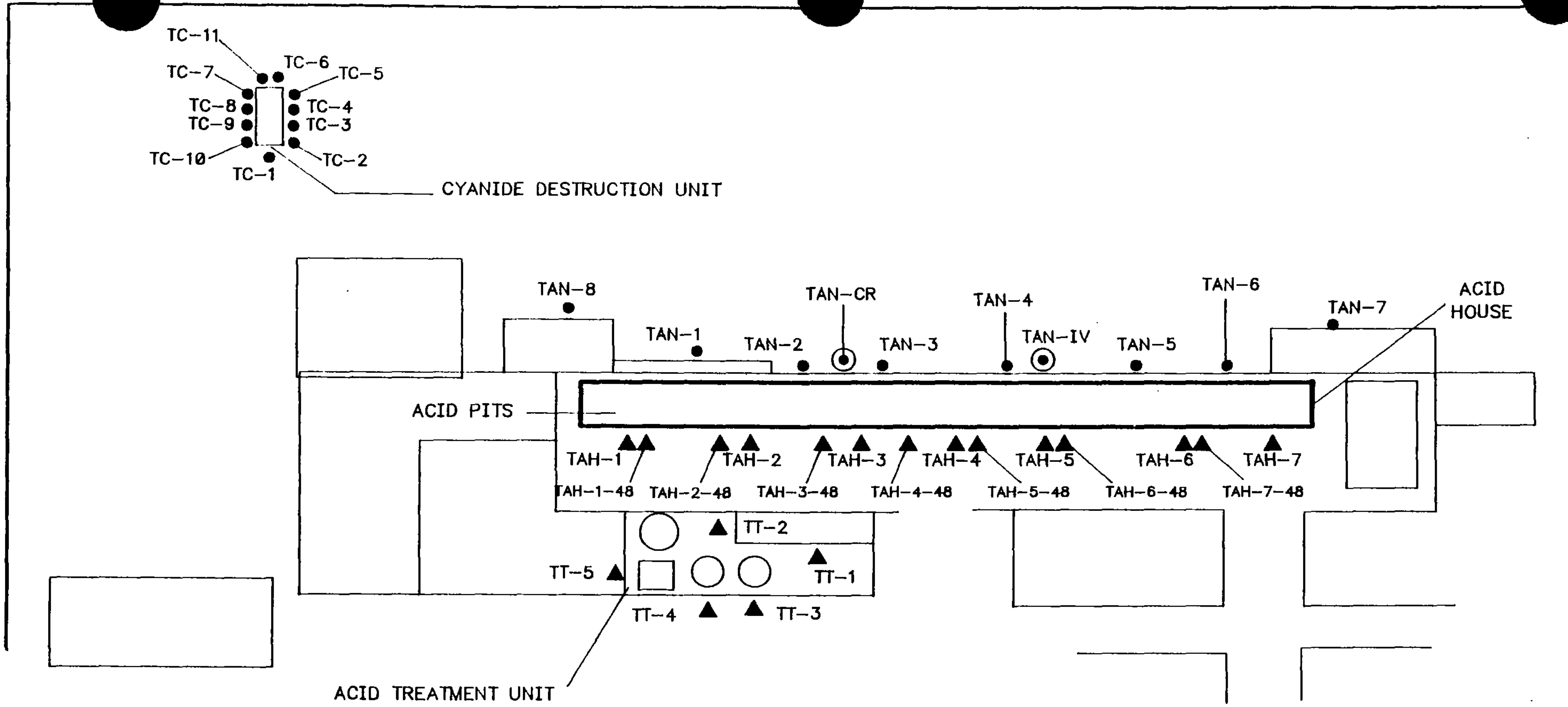


LEGEND

- ● SAMPLES COLLECTED AT 6 TO 12 INCHES AND 18 TO 24 INCHES BELOW GROUND SURFACE
- ▲ SAMPLES COLLECTED BELOW CONCRETE SURFACE
- ⊙ SAMPLES COLLECTED AT OR BELOW BOTTOM INVERT OF ACID PIT

DRAFT

22 Nov 1991 letter Report with Attachment

FIGURE A

WESTON MANAGERS DESIGNERS/CONSULTANTS

Three Hawthorn Parkway
Vernon Hills, Illinois
60061

SWMU CLOSURE SOIL SAMPLING LOCATIONS

TECHALLOY
Union, Illinois

69091 A

Table E-2
Calculation of ~~Soil~~ Cleanup Levels based on Migration to Groundwater and Risk-Based Groundwater Cleanup Objectives
Techalloy Company, Inc.
Union, Illinois

Csoil = Cw x EQ1
EQ1 = Kd + [Pw + (Pa x H')]/BD
Cw = GWobj x DF

Constituent	Chemical Properties[a]: Organic Carbon Partition Coefficient (Koc) (L/kg)	Chemical Properties[a]: Henry's Law Constant (H') (unitless)	Chemical Properties[a]: Soil-water Partition Coefficient (Kd) (L/kg)	EQ1	Groundwater Cleanup Objective GWobj (mg/L)	Target Soil Leachate Concentration Cw (mg/L)	Soil Cleanup Level Csoil (mg/kg)
Volatile Organic Compounds							
Benzene	58.9	0.228	0.1178	0.3376	0.016	0.32	0.108
1,1-Dichloroethane	31.6	0.23	0.0632	0.2831	1	25.2	7.13
1,2-Dichloroethane	17.4	0.0401	0.0348	0.2383	0.027	0.54	0.129
1,1-Dichloroethene	58.9	1.07	0.1178	0.4105	0.012	0.24	0.099
1,2-Dichloroethene	35.5	0.167	0.071	0.2855	0.093	1.86	0.531
Methylene chloride	0.0898	11.7	0.0001796	1.2142	1.22	24.4	29.6
Tetrachloroethene	0.754	155	0.001508	13.635	0.093	1.86	25.4
1,1,1-Trichloroethane	110	0.705	0.22	0.4811	1.62	32.4	15.6
1,1,2-Trichloroethane	50.1	0.0374	0.1002	0.3034	0.037	0.74	0.225
Trichloroethene	166	0.422	0.332	0.5686	0.056	1.12	0.637
Carbon tetrachloride	174	1.25	0.348	0.6563	0.0054	0.108	0.071
Ethylbenzene	363	0.323	0.726	0.9540	2.3	46	43.9
Xylenes	260	0.25	0.52	0.7417	2.02	40.4	30.0
Vinyl chloride	18.6	1.11	0.0372	0.3334	0.0058	0.116	0.039
Inorganics							
Chromium (VI)			19	19.2	0.511	10.22	196.2
Chromium (III)			1.80E+06	1800000.2	102.2	2044	3679200409
Lead				0.2	--	--	--
Nickel			65	65.2	2.044	40.88	2665
Nitrate				0.2	163.5	3270	654

1/6 [illegible] -
5/6 Trivalent

Parameter	Default Value[a]	Units
Bulk density (BD)	1.5	kg/L
Organic carbon content (foc)	0.002	g/g
Water-filled soil porosity (Pw)	0.3	L_{water}/L_{soil}
Air-filled soil porositye (Pa)	0.13	L_{air}/L_{soil}

[a] Source: IEPA, 1996.

Table E-1
Development of Groundwater Objectives: Industrial Land Use
Techalloy Company, Inc.
Union, Illinois
All concentrations in μg/L

Carcinogens/volatiles:
Cw (mg/L) = (TR x BW x AT x 365 days/yr) / (EF x ED x [(IRw x SFo) + (VFw x IRa x SFi))]
= 0.28616 / [(1 x SFo) + (10 x SFi)]

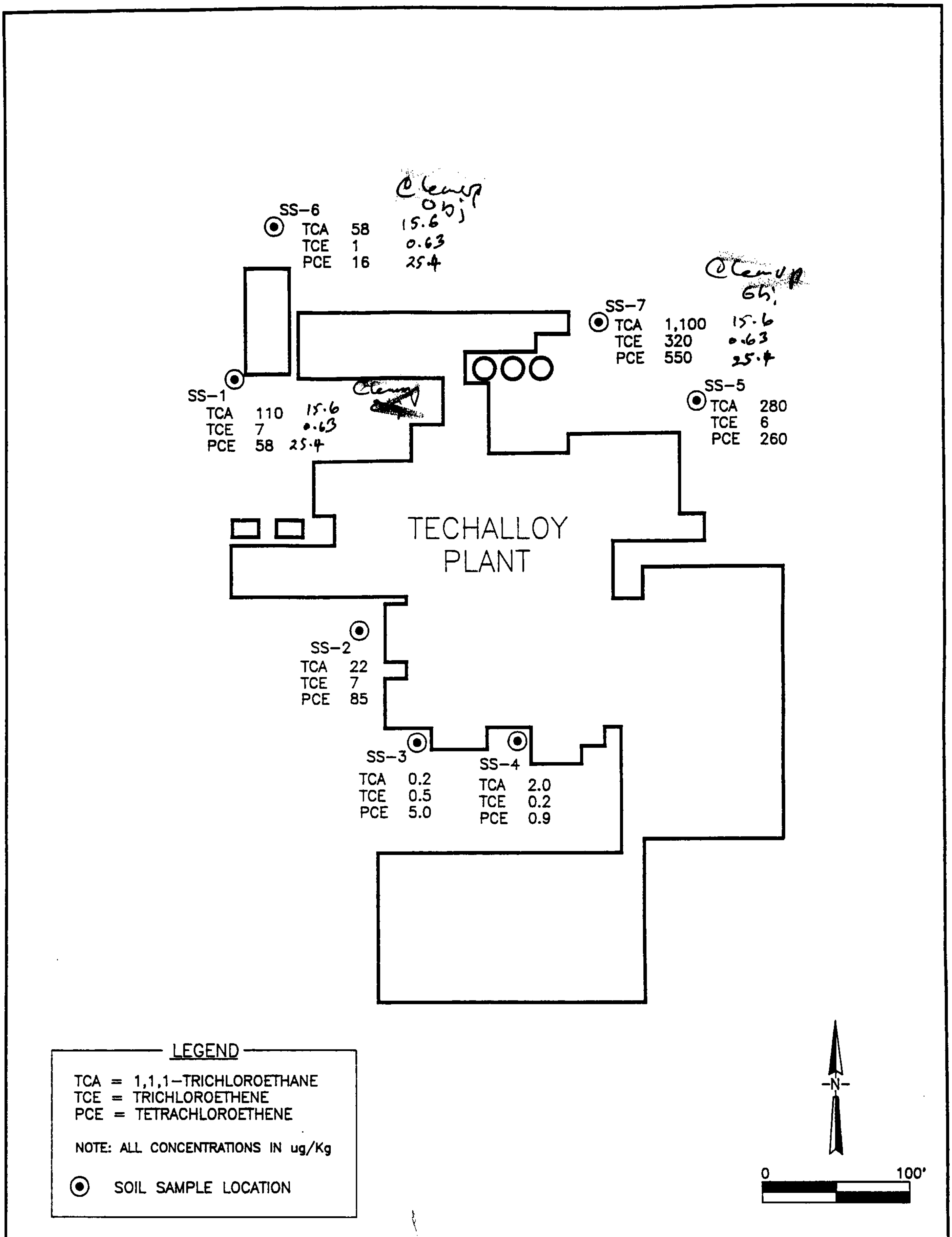
Noncarcinogens/volatiles:
Cw (mg/L) = (THI x BW x AT x 365 days/yr) / (EF x ED x [(IRw / RfDo) + (VFw x IRa) / RfDi))]
= 102.2 / (1/RfDo + 10/RfDi)

Noncarcinogens/non-volatiles:
Cw (mg/L) = (THI x RfDo x BW x AT x 365 days/yr) / (EF x ED x IRw)
= 102.2 x RfDo

	Toxicity Criteria[a]				Groundwater Cleanup Goal (mg/L)	
	Reference Dose		Slope Factor			
	Oral RfDo (mg/kg-day)	Inhalation RfDi (mg/kg-day)	Oral SFo $(mg/kg\text{-}day)^{-1}$	Inhalation SFi $(mg/kg\text{-}day)^{-1}$	Noncarcinogenic Effects	Carcinogenic Effects
Volatile Organic Compounds						
Benzene	1.70E-03	1.70E-03	2.90E-02	2.90E-02	0.016	0.090
1,1-Dichloroethane	1.00E-01	1.40E-01	--	--	1.26	--
1,2-Dichloroethane	2.90E-03	2.90E-03	9.10E-02	9.10E-02	0.027	0.029
1,1-Dichloroethene	9.00E-03	9.00E-03	6.0E-01	1.8E-01	0.084	0.012
1,2-Dichloroethene	1.00E-02	1.00E-02	--	--	0.093	--
Methylene chloride	6.00E-02	8.60E-01	7.5E-03	1.6E-03	3.61	1.22
Tetrachloroethene	1.00E-02	1.00E-02	5.2E-02	2.0E-03	0.093	0.398
1,1,1-Trichloroethane	3.50E-02	2.90E-01	--	--	1.62	--
1,1,2-Trichloroethane	4.00E-03	4.00E-03	5.7E-02	5.6E-02	0.037	0.046
Trichloroethene	6.00E-03	6.00E-03	1.1E-02	6.0E-03	0.056	0.403
Carbon tetrachloride	7.00E-04	5.70E-04	1.3E-01	5.3E-02	0.0054	0.043
Ethylbenzene	1.00E-01	2.90E-01	--	--	2.30	--
Xylene	2.00E+00	2.00E-01	--	--	2.02	--
Vinyl chloride	--	--	1.9E+00	3.0E-01	--	0.0058
Inorganics						
Chromium (VI)	5.00E-03	--	--	--	0.511	--
Chromium (III)	1.00E+00	--	--	--	102.2	--
Lead	--	--	--	--	--	--
Nickel	2.00E-02	--	--	--	2.044	--
Nitrate	1.60E+00	--	--	--	163.5	--

Parameter	Units	Default Value
TR	Target Risk (unitless)	1E-04
THI	Target Hazard Index (unitless)	1
BW	Body Weight (kg)	70
ATc	Averaging Time-carcinogens (yr)	70
ATnc	Averaging Time-noncarcinogens (yr)	25
EF	Exposure Frequency (days/yr)	250
ED	Exposure Duration (yr)	25
IRw	Ingestion Rate - Water (mg/day)	1
IRa	Inhalation Rate - Air (m^3/day)	20
VFw	Volatilization Factor (L/m^3)	0 5

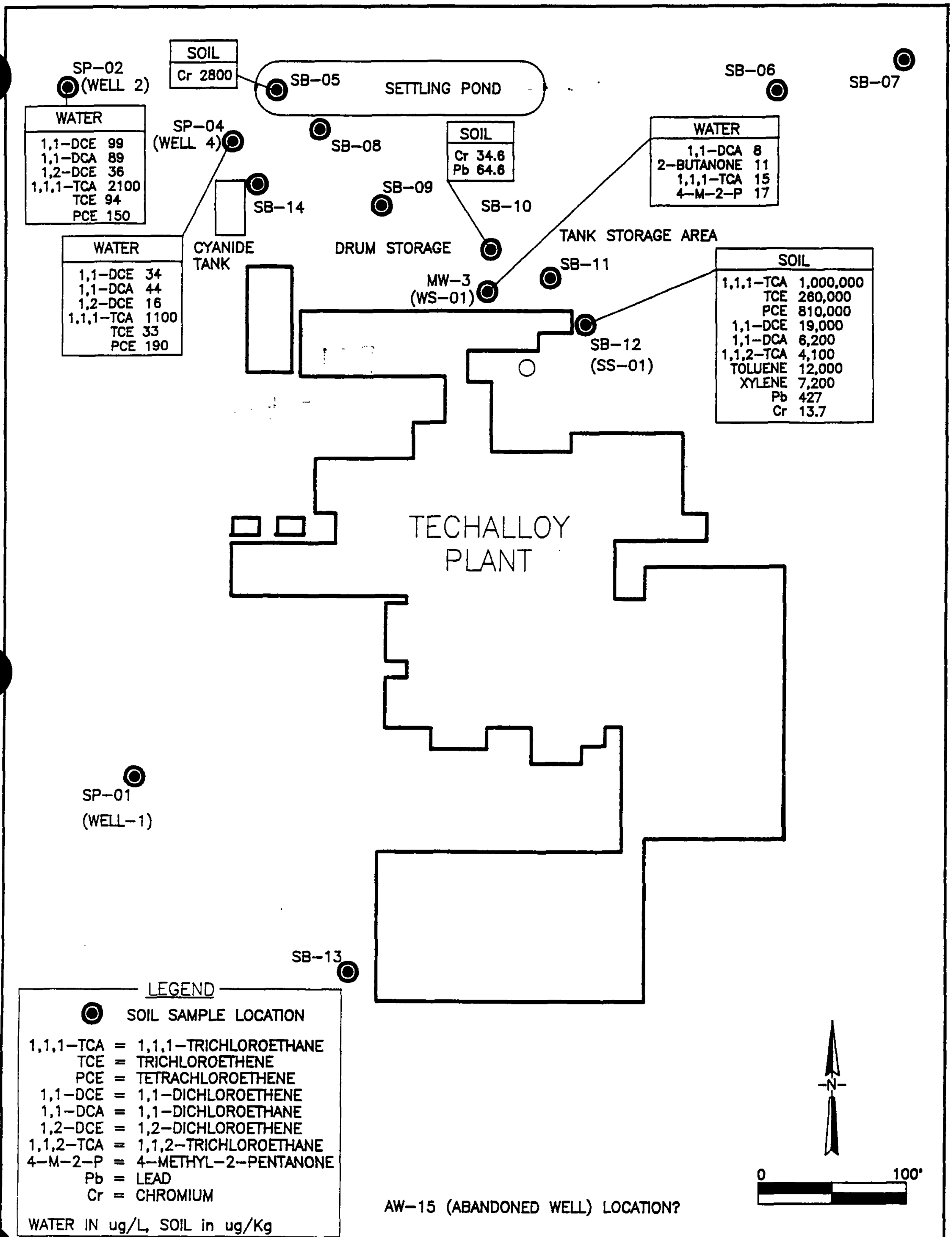
[a] Source: U.S. EPA, 1996c.



WESTON MANAGERS DESIGNERS/CONSULTANTS	Three Hawthorn Parkway Vernon Hills, Illinois 60061	FIGURE 3-3	SOIL SAMPLE CONCENTRATIONS TECHALLOY Union, Illinois

REV. C

13491



WESTON MANAGERS DESIGNERS/CONSULTANTS	Three Hawthorn Parkway Vernon Hills, Illinois 60061	FIGURE 1	**PHASE I SOIL AND WATER SAMPLE LOCATIONS** TECHALLOY Union, Illinois

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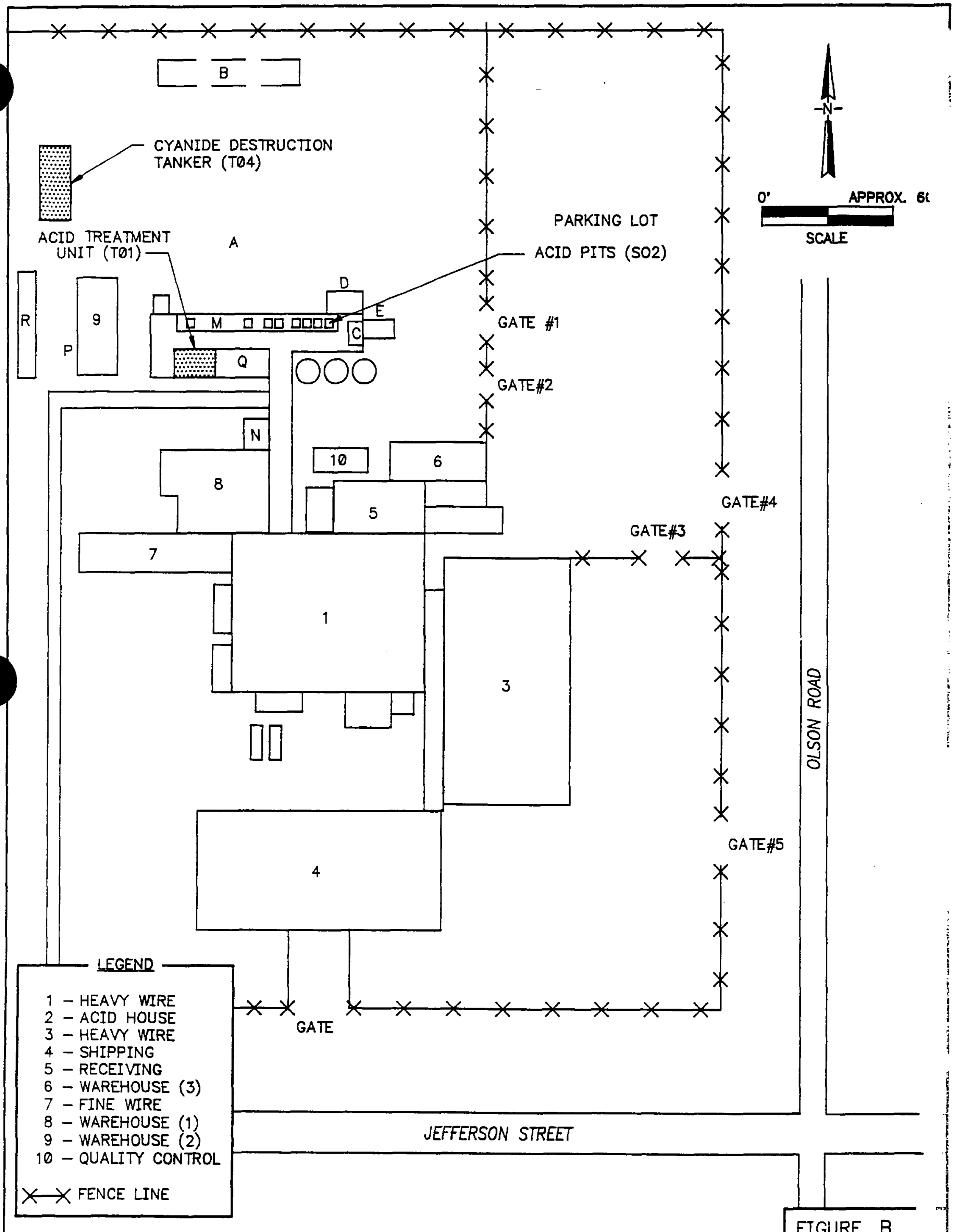

FIGURE B

WESTON
MANAGERS DESIGNERS/CONSULTANTS

Three Hawthorn Parkway
Vernon Hills, Illinois
60061

SITE MAP WITH LOCATION
OF THE SWMU CLOSURE UNITS
TECHALLOY
Union, Illinois

67991 A

CYANIDE TANK

ONLY 2 VOCs ANALYSIS

	Matrix	Depth	1,1,1-TCA	MC	TCE	PCE
			mg/kg			
TC-1	Soil	24"	7	75	ND	12 µg/kg
TC-11	Soil	24"	3J		ND	ND

CYANIDE

			CYANIDE RESULTS. mg/kg	
TC-1	Soil	12"	ND	
TC-1	"	24"	0.77	
TC-2	"	12"	0.77	
TC-2	"	24"	ND	
TC-3	"	12"	5.3	Cleanup 40mg/kg
TC-3	"	24"	ND	pH specific Soil Remediation Objective
TC-4	"	12"	ND	
		24"	ND	
TC-5	"	12"	ND	
		24"	ND	
TC-6	"	12"	ND	
		24"	ND	
TC-7	"	12"	ND	
		24"	ND	
TC-8	"	12"	ND	
		24"	ND	
TC-9	"	12"	ND	
		24"	ND	
TC-10	"	12"	ND	
		24"	ND	
TC-11	"	12"	ND	
		24"	ND	

ACID PITS.

Sample ID (Depth)	Matrix (Soil)	Location	1,1,1-TCA Cleanup 15,600	TCE Cleanup 637	PCE Cleanup 35,400
			ppb	ppb	ppb
TAH-1 (48")	Soil	South of Acid Pit	ND	ND	3J
TAH-2 (48")	Soil	South of Acid Pit	ND	26	ND
TAH-3 (48")	Soil	South of Acid Pit	4J.	ND	4J
TAH-4 (48")	Soil	South of Acid Pit	5J.	ND	9
TAH-5 (48")	Soil	South of Acid Pit	ND	ND	ND
TAH-6 (48")	Soil	South of Acid Pit	ND	9	ND
TAH-7 (48")	Soil	South of Acid Pit	ND	ND	ND
SS-1	Soil	Adjacent to concrete slab south of acid treatment room	110	7	58
SS-6	Soil	North-northwest of acid house	58	1	16
SS-7	Soil	East of acid house	11100	320	550
WS-3	Water	North of acid house	3,748	381	754
SB-10	Soil	North of acid house	Cr = 34.6 ppb Pb = 64.6 ppb	—	—

ACID HOUSE & TREATMENT UNIT

ppb

Sample ID (Depth)	Matrix S=Soil	Location	1,1,1-TCA Cleanup (15,600)	Cleanup TCE (637)	Cleanup PCE (25,400)
TAN-1	S	North of Acid Pit	12" ND 24" ND	ND ND	ND ND
TAN-2	S	North of Acid Pit	12" ND 24" ND	ND ND	ND ND
TAN-3	S	North of Acid Pit	12" ND 24" Benzene 5 ppb (108) 2-Butanone - 12 ppb Toluene - 12 ppb Ethylben - 6 (43900) Xylene = 16 (36000) MC = 310J	ND ND	ND ND
TAN-4	S	North of Acid Pit	12" ND 24" 2 Butanone - 6 MC = 160J	ND ND	ND ND
TAN-5	S	North of Acid Pit	12" MC = 100J 2 Butanone = 8 24" MC = 160	ND ND	ND ND
TAN-6	S	Northeast of Acid Pit	12" MC = 200J TCA = 6 24" MC = 190J	6 ND	6 ND
TAN-7	S	Northeast of Acid Pit	12" MC = 160J 24" MC = 170J 2 Butanone = 37	ND ND	ND ND
TAN-8	S	Northwest of Acid Pit	12" MC = 110J 24" MC = 330J	ND ND	ND ND
TAN-1V	S	North of Acid Pit	36" ND	ND	ND
TAN-CR	S	"	24" ND 36" 6	ND 6	ND 6
TT-1	S	Below concrete Eastern Acid Treatment Unit	55	5J	67
TT-2	S	North side of Acid Treatment Unit	46	4J	63
TT-3	S	South side of Acid Treatment Unit	ND	ND	ND
TT-4	S	South side of Acid Treatment Unit	9	ND	34
TT-5	S	West side of Acid Treatment Unit	17	4J	46

Table I

Summary of Inorganics Detected In Soil
Sampled Inside the Acid House
Techalloy
Union, Illinois

Compound		Analytical Method (SW 846)	TAH-1-48	(DL)	TAH-2-48	(DL)	TAH-3-48	(DL)	TAH-4-48	(DL)	TAH-5-48	(DL)	TAH-6-48	(DL)	TAH-7-48	(DL)
			Sample Number*													
			Concentrations in mg/L													
TCLP	TCLP Clean															
TCLP (extraction)		1311														
Barium	5.0	6010	0.12	0.054	0.304	0.054	0.238	0.054	0.164	0.054	0.595	0.054	0.481	0.054	0.415	0.054
Cadmium	1.0	7131	0.0009	0.0007	0.0015	0.0007	0.004	0.0007	0.0008	0.0007	0.0014	0.0007	0.0032	0.0007	ND	0.0007
Chromium	5.0	6010	0.943	0.056	0.536	0.056	0.446	0.056	0.248	0.056	0.077	0.056	0.111	0.056	ND	0.050
Copper	—	6010	0.64	0.050	0.48	0.050	0.34	0.050	0.22	0.050	0.062	0.050	0.80	0.050	ND	0.050
Nickel	—	6010	3.2	0.050	3.8	0.050	1.5	0.050	2.0	0.050	1.5	0.050	3.8	0.050	2.4	0.050
Lead	5.0	7421	0.621	0.055	0.040	0.002	2.80	0.219	0.247	0.044	0.201	0.011	2.06	0.109	0.002	0.002
Selenium	1.0	7740	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003	ND	0.003
Mercury	0.2	7471	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002	ND	0.0002
Cyanide		9010	ND	0.020	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Percent Solids			88.9	0.10	87.8	0.10	87.6	0.10	90.0	0.10	90.1	0.10	87.7	0.10	88.3	0.010

ND – Not detected.
DL – Detection limit.
*All TAH samples collected below concrete surface from 14 to 20 inches below pits.

\WO\W1500\5409T-I.WK1

Table A

Summary of Inorganics Detected In Soil
Sampled on the North Side of the Acid House
Techalloy
Union, Illinois

Compound		Analytical Method**	TAN 1-12	(DL)	TAN 1-24	(DL)	TAN-2-12	(DL)	TAN-2-24	(DL)	TAN-3-12	(DL)	TAN-3-24	(DL)	TAN-CR-24	(DL)
			Sample Number*													
			Concentrations in mg/kg													
Soluble Chloride		9250	190	50	180	50	140	50	72	50	78	50	59	50	ND	50
Total Cyanide		9010	ND	0.54	2.0	0.49	0.61	0.56	0.81	0.54	3.3	0.55	ND	0.53	1.5	0.60
Soluble Sulfate		375.4(1)	56.7	49.4	69.8	46.8	ND	45.5	82.4	45.8	ND	41.5	ND	44.6	ND	48.9
Total Copper		6010	97.9	2.2	73.0	2.2	81.5	2.3	64.9	2.3	153	2.3	110	1.9	232	2.1
Total Iron		6010	14,800	3.4	11,400	3.4	15,000	3.4	9,030	3.4	12,500	3.5	20,500	2.8	18,900	3.2
			Concentrations in mg/L													
TCLP	TCLP Cleanup															
TCLP (extraction)		1311														
Hexavalent Chromium		312B(2)	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02
Silver	5.0	6010	ND	0.097	ND	0.097	ND	0.097	ND	0.097	ND	0.097	ND	0.097	ND	0.097
Barium	100.0	6010	0.5	0.053	0.142	0.053	0.875	0.053	0.333	0.053	0.152	0.053	0.691	0.053	0.175	0.053
Cadmium	1.0	6010	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050
Chromium	5.0	6010	0.103	0.054	0.209	0.054	0.216	0.054	0.34	0.054	0.106	0.054	0.117	0.054	0.268	0.054
Mercury	0.2	6010	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020
Lead	5.0	6010	ND	0.053	ND	0.053	ND	0.053	ND	0.053	ND	0.053	ND	0.053	ND	0.053
Selenium	1.0	6010	ND	0.1	ND	0.1	ND	0.1	ND	0.1	4.85	0.1	0.057	0.1	2.95	0.1
Percent Solids		209F(3)	87.1	0.10	87.2	0.10	87.0	0.10	84.5	0.10	85.6	0.10	86.7	0.10	81.8	0.10
pH		150.1(1)	4.7	+/-0.20	5.4	+/-0.20	5.7	+/-0.20	4.0	+/-0.20	5.3	+/-0.20	4.7	+/-0.20	5.1	+/-0.20

**All analytical methods SW846 unless otherwise indicated.
(1) EPA method.
(2) ASTM method.
(3) Standard methods.
ND – Not detected.
DL – Detection limit.
*Final two digits of sample number indicate depth (in inches) at which sample was collected.

\WO\W1500\5409T-A.WK1

Table A (Cont.)

Summary of Inorganics Detected In Soil
Sampled on the North Side of the Acid House
Techalloy
Union, Illinois

Compound		Analytical Method**	TAN-4-12	(DL)	TAN-4-24	(DL)	TAN-5-12	(DL)	TAN-5-24	(DL)	TAN-6-12	(DL)	TAN-6-24	(DL)	TAN-7-12	(DL)
			Sample Number*													
			Concentrations in mg/kg													
Soluble Chloride		9250	53	50	66	50	120	50	82	50	130	50	106	50	51	50
Total Cyanide		9010	2.1	0.51	19.8	1.1	ND	0.50	ND	0.49	ND	0.58	ND	0.60	ND	0.52
Soluble Sulfate		375.4(1)	472	48.3	409	51.0	82.9	75.3	ND	57.7	ND	97.2	ND	83.0	ND	80.5
Total Copper		6010	169	2.2	146	2.1	3.2	2.1	13.5	2.3	30.7	2.4	9.7	2.2	46.6	2.1
Total Iron		6010	19,400	3.3	14,400	3.2	9,320	3.3	8,990	2.8	10,100	3.5	9,500	3.3	4,880	2.9
			Concentrations in mg/L													
TCLP	TCLP Chief															
TCLP (extraction)		1311														
Hexavalent Chromium		312B(2)	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02
Silver	5.0	6010	ND	0.097	ND	0.097	ND	0.097	ND	0.067	ND	0.067	ND	0.067	ND	0.067
Barium	100.0	6010	0.39	0.053	0.242	0.053	0.461	0.053	0.558	0.055	1.06	0.055	0.547	0.055	0.415	0.055
Cadmium	1.0	6010	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050
Chromium	5.0	6010	0.25	0.054	0.274	0.054	ND	0.054	ND	0.056	ND	0.056	ND	0.056	ND	0.056
Mercury	0.2	6010	ND	0.020	ND	0.020	ND	0.020	ND	0.022	ND	0.022	ND	0.022	ND	0.022
Lead	5.0	6010	200	0.053	184	0.053	0.491	0.053	0.481	0.054	0.054	0.054	0.113	0.054	14.5	0.054
Selenium	1.0	6010	ND	0.1	ND	0.1	ND	0.1	ND	0.107	ND	0.107	ND	0.107	ND	0.107
Percent Solids		209F(3)	87.5	0.10	85.5	0.10	88.2	0.10	86.9	0.10	79.9	0.10	84.1	0.10	90.1	0.10
pH		150.1(1)	5.6	+/-0.20	4.5	+/-0.20	6.0	+/-0.20	6.3	+/-0.20	8.0	+/-0.20	7.9	+/-0.20	7.9	+/-0.20

**All analytical methods SW846 unless otherwise indicated.
(1) EPA method.
(2) ASTM method.
(3) Standard methods.
ND – Not detected.
DL – Detection limit.
*Final two digits of sample number indicate depth (in inches) at which sample was collected.

\WO\W1500\5409T-A.WK1

Table A (Cont.)

Summary of Inorganics Detected In Soil
Sampled on the North Side of the Acid House
Techalloy
Union, Illinois

Compound		Analytical Method**	TAN-7-24	(DL)	TAN-8-12	(DL)	TAN-8-12D	(DL)	TAN-8-24	(DL)	TAN-8-24D	(DL)	TAN-IV-36	(DL)
			Sample Number*											
			Concentrations in mg/kg											
Soluble Chloride		9250	97	50	ND	59	ND	59	ND	60	ND	59	ND	57
Total Cyanide		9010	2.6	0.51	0.72	0.55	2.1	0.59	ND	0.55	ND	0.56	ND	0.56
Soluble Sulfate		375.4(1)	ND	65.2	110	88.2	ND	75.2	ND	93.3	ND	82.0	ND	77.0
Total Copper		6010	192	1.7	19.3	2.3	252	1.9	21.2	2.4	34.6	2.4	68.6	2.2
Total Iron		6010	9,290	2.6	3,600	3.1	20,000	2.9	2,540	3.2	8,240	3.4	14,800	3.4
			Concentrations in mg/L											
TCLP	TCLP Cleanup													
TCLP (extraction)		1311												
Hexavalent Chromium		312B(2)	ND	0.02	0.024	0.02	0.67	0.02	0.30	0.02	0.032	0.02	ND	0.02
Silver	5.0	6010	ND	0.067	ND	0.067	ND	0.067	ND	0.067	ND	0.067	ND	0.067
Barium	150.0	6010	0.703	0.055	0.855	0.055	0.823	0.055	0.540	0.055	2.35	0.055	0.767	0.055
Cadmium	1.0	6010	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050
Chromium	5.0	6010	ND	0.056	0.172	0.056	0.944	0.056	0.429	0.056	0.181	0.056	0.071	0.056
Mercury	0.2	6010	ND	0.022	ND	0.022	ND	0.022	ND	0.022	ND	0.022	ND	0.010
Lead	5.0	6010	147	0.054	3.02	0.054	1.68	0.054	0.474	0.054	0.096	0.054	2.75	0.054
Selenium	1.0	6010	ND	0.107	ND	0.107	ND	0.107	ND	0.107	ND	0.107	ND	0.107
Percent Solids		209F(3)	94.6	0.10	84.8	0.10	85.1	0.10	83.0	0.10	84.4	0.10	88.4	0.10
pH		150.1(1)	8.0	+/-0.20	6.0	+/-0.20	6.2	+/-0.20	5.9	+/-0.20	5.9	+/-0.20	5.2	+/-0.20

**All analytical methods SW846 unless otherwise indicated.
(1) EPA method.
(2) ASTM method.
(3) Standard methods.
ND – Not detected.
DL – Detection limit.
*Final two digits of sample number indicate depth (in inches) at which sample was collected.

\WO\W1500\5409T-A.WK1

Table B

Summary of Inorganics Detected In Soil
Sampled Around the Cyanide Destruction Unit
Techalloy
Union, Illinois

Compound		Analytical Method**	Sample Number*													
			TC-1-12	(DL)	TC-1-12D	(DL)	TC-1-24	(DL)	TC-2-12	(DL)	TC-2-24	(DL)	TC-3-12	(DL)	TC-3-24	(DL)
			Concentrations in mg/kg													
Soluble Chloride		9250	---	---	---	---	120	50	---	---	---	---	---	---	---	---
Total Cyanide		9010	ND	0.52	ND	0.47	ND	0.48	0.77	0.54	ND	0.42	5.3	0.52	ND	0.56
Soluble Sulfate		375.4(1)	---	---	---	---	55.3	42.4	---	---	---	---	---	---	---	---
Total Copper		6010	---	---	---	---	49.8	2.8	---	---	---	---	---	---	---	---
Total Iron		6010	---	---	---	---	12,800	11.2	---	---	---	---	---	---	---	---
			Concentrations in mg/L													
TCLP																
TCLP (extraction)		1311														
Hexavalent Chromium		312B(2)	---	---	---	---	ND	0.020	---	---	---	---	---	---	---	---
Silver	5.0	6010	---	---	---	---	ND	0.097	---	---	---	---	---	---	---	---
Barium	100.0	6010	---	---	---	---	0.545	0.053	---	---	---	---	---	---	---	---
Cadmium	1.0	6010	---	---	---	---	ND	0.050	---	---	---	---	---	---	---	---
Chromium	5.0	6010	---	---	---	---	ND	0.054	---	---	---	---	---	---	---	---
Mercury	0.2	6010	---	---	---	---	ND	0.020	---	---	---	---	---	---	---	---
Lead	5.0	6010	---	---	---	---	ND	0.053	---	---	---	---	---	---	---	---
Selenium	1.0	6010	---	---	---	---	ND	0.10	---	---	---	---	---	---	---	---
Percent Solids		209F(3)	90.6	0.10	88.7	0.10	87.2	0.10	91.9	0.10	87.7	0.10	91.0	0.10	88.4	0.10
pH		150.1(1)	---	---	---	---	7.4	+/-0.2	---	---	---	---	---	---	---	---

**All analytical methods SW 846 unless otherwise indicated.

(1) EPA method.

(2) ASTM method.

(3) Standard methods.

--- – Analysis not performed.

ND – Not detected.

DL – Detection limit.

*Final two digits of sample number indicate depth (in inches) at which sample was collected.

\WO\W1500\5409T-B.WK1

Table B (Cont.)

Summary of Inorganics Detected In Soil
Sampled Around the Cyanide Destruction Unit
Techalloy
Union, Illinois

Compound		Analytical Method**	TC-4-12	(DL)	TC-4-24	(DL)	TC-5-12	(DL)	TC-5-24	(DL)	TC-6-12	(DL)	TC-6-24	(DL)	TC-7-12	(DL)
			Sample Number*													
			Concentrations in mg/kg													
Soluble Chloride		9250	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Cyanide		9010	ND	0.48	ND	0.54	ND	0.54	ND	0.56	ND	0.54	ND	0.54	ND	0.53
Soluble Sulfate		375.4(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Copper		6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Iron		6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
			Concentrations in mg/L													
TCLP	TCLP Chief															
TCLP (extraction)		1311														
Hexavalent Chromium		312B(2)	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Silver	5.0	6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Barium	100.0	6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Cadmium	1.0	6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Chromium	5.0	6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Mercury	0.2	6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lead	5.0	6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Selenium	1.0	6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Percent Solids		209F(3)	91.2	0.10	89.0	0.10	88.8	0.10	87.4	0.10	86.8	0.10	89.9	0.10	87.6	0.10
pH		150.1(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---

**All analytical methods SW 846 unless otherwise indicated.
(1) EPA method.
(2) ASTM method.
(3) Standard methods.
--- – Analysis not performed.
ND – Not detected.
DL – Detection limit.
*Final two digits of sample number indicate depth (in inches) at which sample was collected.

\WO\W1500\5409T-B.WK1

Table B (Cont.)

Summary of Inorganics Detected In Soil
Sampled Around the Cyanide Destruction Unit
Techalloy
Union, Illinois

ompound		Analytical Method**	TC-7-24	(DL)	TC-8-12	(DL)	TC-8-24	(DL)	TC-9-12	(DL)	TC-9-24	(DL)	TC-10-12	(DL)	TC-10-24	(DL)
			Sample Number*													
			Concentrations in mg/kg													
oluble Chloride		9250	---	---	---	---	---	---	---	---	---	---	---	---	---	---
otal Cyanide		9010	ND	0.51	ND	0.52	ND	0.50	ND	0.48	ND	0.51	ND	0.55	ND	0.53
oluble Sulfate		375.4(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---
otal Copper		6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
otal Iron		6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
			Concentrations in mg/L													
CLP	TCLP Cluf															
CLP (extraction)		1311														
lexavalent Chromium		312B(2)	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ilver	5.0	6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
arium	100.0	6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
admium	1.0	6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
hromium	5.0	6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
lercury	0.2	6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ead	5.0	6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
elenium	1.0	6010	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ercent Solids		209F(3)	91.5	0.10	88.0	0.10	88.2	0.10	88.3	0.10	89.2	0.10	87.9	0.10	88.3	0.10
H		150.1(1)	---	---	---	---	---	---	---	---	---	---	---	---	---	---

*All analytical methods SW 846 unless otherwise indicated.
) EPA method.
) ASTM method.
) Standard methods.
--- – Analysis not performed.
D – Not detected.
L – Detection limit.
Final two digits of sample number indicate depth (in inches) at which sample was collected.

VO\W1500\5409T-B.WK1

Table B (Cont.)

Summary of Inorganics Detected In Soil
Sampled Around the Cyanide Destruction Unit
Techalloy
Union, Illinois

Compound		Analytical Method**	TC-11-12	(DL)	TC-11-12D	(DL)	TC-11-24	(DL)	C-11-24D	(DL)
					Concentrations in mg/kg					
;oluble Chloride		9250	---	---	---	---	240	56	180	56
'otal Cyanide		9010	ND	0.55	1.3	0.54	ND	0.54	1.2	0.52
;oluble Sulfate		375.4(1)	---	---	---	---	648	81.5	750	71.0
'otal Copper		6010	---	---	---	---	19.8	2.2	6.6	2.1
'otal Iron		6010	---	---	---	---	13,600	3.3	15,100	3.2
					Concentrations in mg/kg					
'CLP	TCLP Clean									
'CLP (extraction)		1311								
lexavalent Chromium		312B(2)	---	---	---	---	ND	0.02	ND	0.02
;ilver	5.0	6010	---	---	---	---	ND	0.067	ND	0.067
iarium	100.0	6010	---	---	---	---	0.310	0.055	0.296	0.055
;admium	1.0	6010	---	---	---	---	ND	0.050	ND	0.050
;hromium	5.0	6010	---	---	---	---	ND	0.056	ND	0.056
lercury	0.2	6010	---	---	---	---	ND	0.022	ND	0.022
.ead	5.0	6010	---	---	---	---	ND	0.054	ND	0.054
;elenium	1.0	6010	---	---	---	---	ND	0.107	ND	0.107
'ercent Solids		209F(3)	90.2	0.10	88.3	0.10	88.6	0.10	89.0	0.10
H		150.1(1)	---	---	---	---	5.5	+/-0.20	5.5	+/-0.20

Sample Number*

*All analytical methods SW 846 unless otherwise indicated.

l) EPA method.

!) ASTM method.

I) Standard methods.

--- – Analysis not performed.

ID – Not detected.

L – Detection limit.

Final two digits of sample number indicate depth (in inches) at which sample was collected.

VO\W1500\5409T-B.WK1

Table C

Summary of Inorganics Detected In Soil
Sampled Inside the Acid House
Techalloy
Union, Illinois

Compound		Analytical Method**	TAH-1	(DL)	TAH-2	(DL)	TAH-3	(DL)	TAH-4	(DL)	TAH-5	(DL)	TAH-6	(DL)	TAH-7	(DL)
			Concentrations in mg/kg													
Soluble Chloride		9250	180	50	130	50	100	50	100	50	55	50	ND	50	69	50
Total Cyanide		9010	ND	0.5	ND	0.46	ND	0.57	ND	0.58	ND	0.40	ND	0.49	ND	0.45
Soluble Sulfate		375.4(1)	ND	50.9	60.5	49.3	151	53.2	204	37.3	56.4	44.4	135	47.0	ND	49.4
Total Copper		6010	279	2	72.8	2.1	24.6	2.2	16.5	2.2	88.9	2.0	265	2.1	3.8	1.9
Total Iron		6010	5,530	3.1	12,100	3.1	8,170	3.3	10,900	3.3	3,910	3.0	2,940	3.1	4,000	2.9
			Concentrations in mg/L													
TCLP																
TCLP (extraction)	Chang Reg	1311														
Hexavalent Chromium		312B(2)	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02
Silver	5.0	6010	ND	0.097	ND	0.097	ND	0.097	ND	0.097	ND	0.097	ND	0.097	ND	0.097
Barium	100.0	6010	0.137	0.053	0.388	0.053	0.652	0.053	0.167	0.053	0.154	0.053	0.255	0.053	0.175	0.053
Cadmium	1.0	6010	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050
Chromium	5.0	6010	ND	0.054	0.096	0.054	ND	0.054	ND	0.054	0.343	0.054	ND	0.054	0.268	0.054
Mercury	0.2	6010	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020	ND	0.020
Lead	5.0	6010	ND	0.053	ND	0.053	ND	0.053	0.542	0.053	0.223	0.053	1.08	0.053	ND	0.053
Selenium	1.0	6010	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	ND	0.10	2.95	0.10
Percent Solids		209F(3)	95.3	0.10	89.8	0.10	86.6	0.10	86.5	0.10	92.9	0.10	95.7	0.10	95.0	0.10
pH		150.1(1)	9.2	+/-0.20	6.5	+/-0.20	7.2	+/-0.20	7.2	+/-0.20	8.3	+/-0.20	8.6	+/-0.20	9.3	+/-0.20

Sample Number*

**All analytical methods SW846 unless otherwise indicated.
(1) EPA method.
(2) ASTM method.
(3) Standard methods.
ND – Not detected.
DL – Detection limit.
*All TAH samples collected below concrete surface from 0 to 6 inches below soil/backfill interface.

WO\W1500\5409T-C.WK1

Table D

Summary of Inorganics Detected In Soil
Sampled in and Around Acid Treatment Room
Techalloy
Union, Illinois

Compound		Analytical Method**	Sample Number* TT-1	(DL)	TT-2	(DL)	TT-3	(DL)	TT-4	(DL)	TT-5	(DL)
							Concentrations in mg/kg					
Soluble Chloride		9250	250	50	130	50	100	58	100	60	55	56
Total Cyanide		9010	0.74	0.57	ND	0.46	ND	0.58	ND	0.52	ND	0.55
Soluble Sulfate		375.4(1)	806	43.9	60.5	49.2	151	45.9	204	89.6	56.4	81.2
Total Copper		6010	5.4	3.1	72.8	2.8	24.6	2.3	16.5	2.3	88.9	2.2
Total Iron		6010	8,680	12.4	12,100	11.0	8,170	3.4	10,900	3.4	3,910	3.3
							Concentrations in mg/L					
TCLP	TCLP Chop											
TCLP (extraction)		1311										
Hexavalent Chromium		312B(2)	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.02
Silver	5.0	6010	ND	0.097	ND	0.097	ND	0.067	ND	0.067	ND	0.067
Barium	100.0	6010	0.404	0.053	0.357	0.053	1.0	0.055	0.719	0.055	0.622	0.055
Cadmium	1.0	6010	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.056
Chromium	5.0	6010	ND	0.054	ND	0.054	ND	0.056	ND	0.056	ND	0.050
Mercury	0.2	6010	ND	0.020	ND	0.020	ND	0.022	ND	0.022	ND	0.022
Lead	5.0	6010	ND	0.053	ND	0.053	ND	0.054	ND	0.054	ND	0.054
Selenium	1.0	6010	ND	0.10	ND	0.10	ND	0.107	ND	0.107	ND	0.107
Percent Solids		209F(3)	78.9	0.10	87.9	0.10	86.6	0.10	83.4	0.10	88.5	0.10
pH		150.1(1)	8.4	+/-0.20	8.5	+/-0.20	8.8	+/-0.20	7.2	+/-0.20	8.8	+/-0.20

**All analytical methods SW846 unless otherwise indicated.
(1) EPA method.
(2) ASTM method.
(3) Standard methods.
ND – Not detected.
DL – Detection limit.
*All TT samples collected below concrete surface from 0 to 6 inches below soil/backfill interface.

\WO\W1500\5409T-D.WK1

2548

OC Region 11-2-90

CH
K

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CERTIFIED MAIL

30 October 1990

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Illinois Environmental Protection Agency
P.O. Box 19276
Springfield, IL 62794-9276

Subject: 111090003--McHenry County
Techalloy Company, Inc.
ILD 005 178 975
RCRA-Closure, Log #C-548

Dear Mr. Estep:

The requests for revisions to the Closure Plan submitted to you on 5 July 1990 are significant. Techalloy Company, Inc. respectfully requests a 30 day extension for the submittal of the revised Closure Plan for the above-noted facility. This would revise the due date from November 2 to December 2, 1990. If we do not hear from you within five days, it will be Techalloy's understanding that you have granted this extension.

Thank you for your attention to this matter.

Very truly yours,

ROY F. WESTON, INC.

John W. Thorsen

John W. Thorsen, P.E.
Project Director

JWT/ieh

cc: Mr. Kevin Lesko - Illinois EPA
Mr. Richard Perlick - Techalloy
Mr. George R. Miller - Techalloy

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IEPA-DLPC

IH207

EXHIBIT NO 11

C 548

WESTON
MANAGERS DESIGNERS/CONSULTANTS

100 CORPORATE NORTH, SUITE 101
ROUTE 22 AND LAKESIDE DRIVE
BANNOCKBURN, ILLINOIS 60015
(312) 295-6020

3 July 1990

Mr. Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield, IL 62794-9276

Subject: McHenry County - Techalloy Company, Inc.
Union, Illinois
Closure Plan Submittal

Dear Mr. Eastep:

Per our agreement with Mr. Cliff Gould in the IEPA Maywood office, WESTON is submitting this Closure Plan for the Techalloy Company, Inc. site in Union, Illinois for the hazardous waste treatment facilities located at the plant. This Closure Plan was originally agreed to be submitted on 1 July 1990. I spoke with Mr. Gould on 29 June 1990, the day it would have to be sent in order to arrive by 2 July 1990. I indicated to Mr. Gould that, not only did I receive comments from Techalloy on that day, but our office was moving. I indicated that it would be more reasonable, if permitted, to send the document on Monday or Tuesday for arrival on Tuesday or Thursday. He agreed with this approach.

Therefore, I am submitting the Techalloy RCRA Closure Plan for the Waste Treatment Facilities at the plant to you for your review and approval.

If you have any questions regarding this submittal, please do not hesitate to contact me at our new number at (708)-918-4102. Thank you for your consideration in this matter.

Very truly yours,

ROY F. WESTON, INC.

John W. Thorsen

John W. Thorsen, P.E.
Vice President

JWT/ieh
Enclosures
cc: Cliff Gould, IEPA-Maywood (w/encl)
Henry Lopes, Techalloy (w/o encl)
Tom Stotler, Techalloy (w/o encl)
George Miller, Techalloy (w/o encl)

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JUL 05 1990
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EXHIBIT NO 8

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SECTION 1

INTRODUCTION

This plan presents details of activities that will be performed in the closure of the three RCRA-regulated hazardous waste management units at the Techalloy Company, Inc. (Techalloy) facility, located at the intersection of Olson and Jefferson Roads in McHenry County in Union, Illinois (SE 1/4, NE 1/4, Sec. 4, T. 33N, R.6E). The 40-acre facility is bounded by Olson Road on the east, Jefferson Road on the south, and farmland on the west and north (Figure 1-1).

Techalloy is a steel wire drawing facility and has operated since 1960. Presently, Techalloy processes steel and nickel alloy rod. Unprocessed, hot-rolled rod is annealed and drawn into coils or spools of wire of varying strengths and diameters. A variety of coatings and cleaners are utilized in the production processes, including acidic and caustic cleaners, coating solutions, dyes, and rinses. The Standard Industrial Classification (SIC) codes for Techalloy are SIC: 3315 and 3316. → Waste is K0

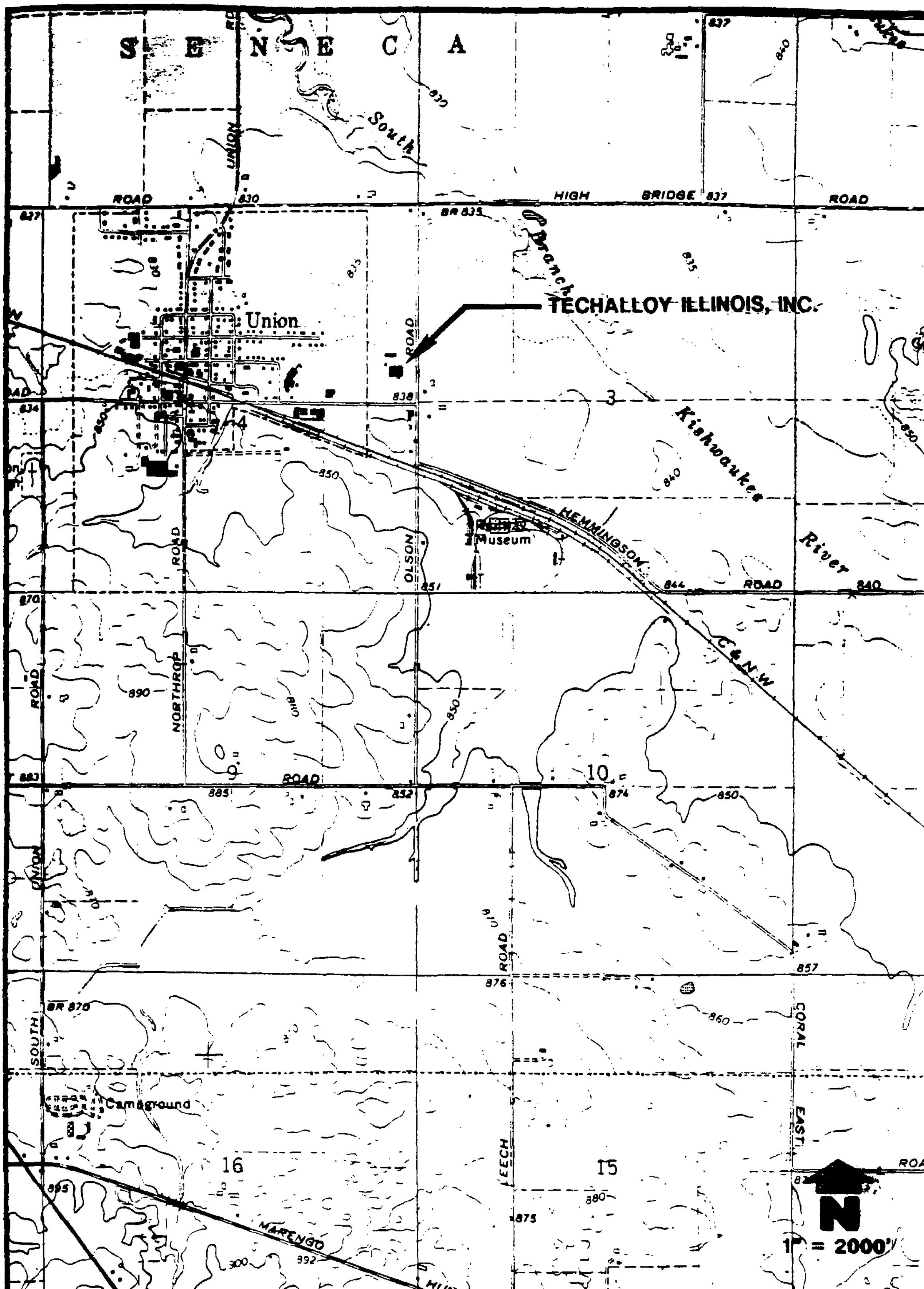
and D007

The wastes generated during production include waste acids (U.S. EPA Hazardous Waste Code D002, corrosive characteristic) used in washing the wire. This spent acid can be treated at Techalloy's on-site acid treatment facility but usually is transported to an off-site treatment facility. Techalloy also generated spent cyanide rinsewater (Hazardous Waste Code D003, reactive characteristic) from a copper coating process. This waste stream has been treated at Techalloy's on-site cyanide destruction unit. Based on operating practices over the past four years in the management of the two waste streams treated by these units (the regular availability of transport vehicles for acid treatment and the installation of a new copper coating facility reducing the waste to spent filters), Techalloy is closing the treatment units. These two treatment units are the subject of this closure plan.

Techalloy indicated to IEPA in a 7 November 1988 RCRA Permit Information Form (Appendix A) of its intention to submit a closure plan for the facility by 8 November 1992 and to initiate closure activities no later than 180 days after final closure plan approval by IEPA.

This closure plan has been prepared in accordance with the requirements of 35 Ill. Adm. Code 725, Subpart G and identifies the steps necessary for the proper closure of the aforementioned units.

WESTON



SEC 4, T. 33 N, R. 6 E.

FIGURE 1-1. Site Location Map.

1.1 DESCRIPTION OF CLOSURE UNITS

This section provides detailed descriptions of the on-site acid treatment, acid pit and cyanide destruction units. These units are listed on the current U.S. EPA Part A Permit Application forms, which are included in Appendix B. Figure 1-2 shows the location of each closure unit at the Techalloy facility.

1.1.1 On-Site Acid Treatment Facility

The wastes treated at the on-site unit are spent acids and rinses from pickling operations. These wastes are generated periodically when a treatment bath becomes too dilute or a rinse bath becomes ineffective. These wastes are characteristically hazardous due to acidity and therefore are classified with the U.S. EPA Hazardous Waste Code D002. Analytical data for the D002 waste is provided in Appendix C-1. Table 1-1 identifies the sample locations for the analytical data provided in Appendix C. 12-2-87 [illegible] indicates D007

The acid treatment unit (Figure 1-3) is located within the acid house as shown in Figure 1-2. The treatment unit has been utilized since it was constructed in 1980 and presently operates on a standby basis. When the on-site unit is not used, Techalloy transports their waste for treatment at an offsite facility (Envirite, Inc. or Clean Harbors, Inc.). The on-site treatment system consist of:

- Two 1,000-gallon fiberglass reactor tanks;
- A 500-gallon rinsewater reactor tank (located separately from the unit shown in Figure 1-3);
- A gravity filtration apparatus with 12 80-gallon bags suspended above a filtrate collection pit/sump;
- A 2,700-gallon steel clarifier used for filtrate polishing; and
- System pumps, mixers, and pH control instrumentation.

The acid treatment unit is a batch neutralization and filtration system with the process code T01. Treatment is initiated after waste acid is diverted to the system and one of the two 1,000-gallon waste acid collection tanks becomes full. Neutralization is first achieved with the metered addition of caustic (sodium hydroxide or potassium hydroxide) until a near-neutral pH is reached. The neutralized acid is then conveyed to bag filters, and the filtrate is clarified and recycled to the acid rinse tanks on the production line. The metal hydroxide sludge collected in the bag filters is air-dried for approximately two days and is then stored in a hopper until it is transported to a RCRA hazardous waste facility.

[illegible]

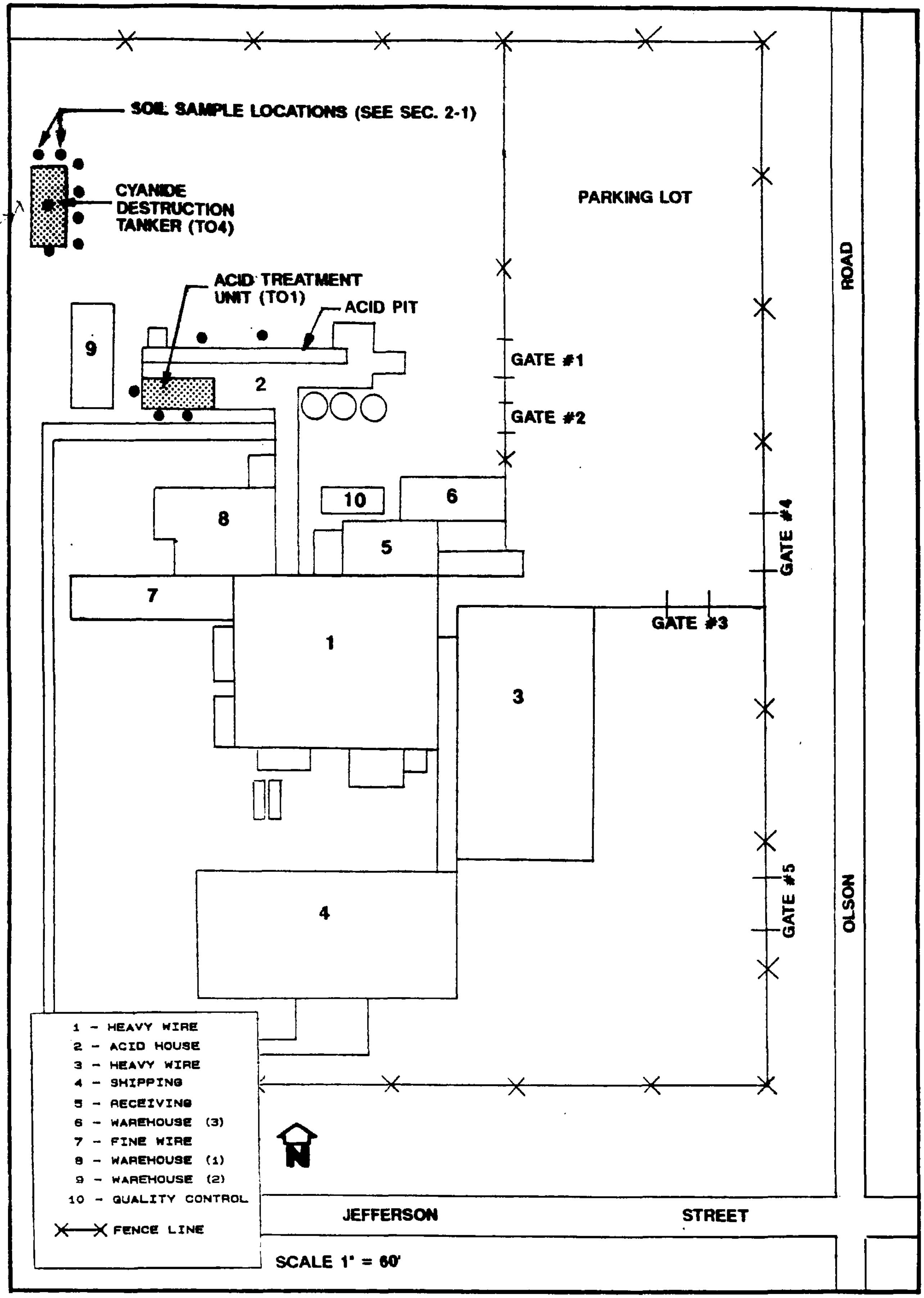


FIGURE 1-2. Site Map with Location of Closure Units.

TABLE 1-1

SAMPLE LOCATIONS FOR ANALYTICAL
DATA PROVIDED IN APPENDIX C

Sample No.	Sample Collection Point
CHI#4803	Small acid pit
CHI#4021	Big acid pit
23011	Wastewater treatment sludge from Hopper
33977	Wastewater treatment sludge from Hopper
31472	Wastewater treatment sludge from Hopper
29503	Wastewater treatment sludge from Hopper
19012	Wastewater treatment sludge from Hopper
22779	Wastewater treatment sludge from Hopper
1415	Wastewater treatment sludge from Hopper
CHI#4574	Pit cleaning sludge from pit
23010	High acid - process waste
W3058A	Old cyanide - pit bottom

Approximately 250 feet of various diameter PVC piping connect the components of the treatment system. All piping and tankage is above-ground, and the treatment unit itself is constructed upon a 6-inch wire-reinforced, continuous concrete slab and the bag filter area is washed. The floor contains no drains, holes, seams, or expansion joints and the bag filter area is washed. The concrete floor is in good structural condition with only minor surface cracks. There is no visible evidence of previous waste spillage, overflow incidents, or other releases to the floor. The unit has been on stand-by since 1988 and has not been used since then. All tanks are in good condition and show no evidence of leakage. There also have been no known incidents of spillage associated with the operation of this on-site treatment system. The loading and unloading of each unit, except for caustic tank and poly tank, is done by pumps through the piping.

1.1.2 Cyanide Destruction Unit

The cyanide destruction unit (Figure 1-4) consists of a freestanding wheel-mounted tanker with the process code T04 (the original Part A application reported the process code as T01). It is constructed of stainless steel and has a capacity of 3,000 gallons. The tanker has a footprint of 8' x 23'. It is located in the northwest quadrant of the Techalloy property (Figure 1-2) and sits atop a level, compacted dirt surface. Surface drainage in the immediate area of the tanker is to the north. There are no sewer drains, curbs, or gutters in the vicinity of the unit. Additionally, there have been no known instances of waste spillage during any phase of the treatment procedure.

Access to the interior of the tanker is provided by a manhole at the top center, and there is an outlet valve at the rear of the bottom of the tanker. The tanker has not been moved since it was installed in its original location in 1983.

The tanker has been used four times for the batch treatment of copper plating rinse water, whose waste code is D003 as listed on Techalloy's Part A application. Analytical data characterizing this waste is presented in Appendix C-2. Initially, rinse water from the copper plating process was pumped into 55-gallon drums which are then sealed, placed on pallets, and transported to the treatment tanker. The contents of the drums are pumped into the tanker through the manhole. After approximately 2,000 gallons are collected in the tanker, treatment is initiated.

The treatment process consists of the batch conversion of free copper cyanide to cyanate by oxidation with hypochlorite. Approximately 340 pounds of hypochlorite were added on each of the four occasions the tanker has been used. The pH of the mixture is maintained above 10 in order to prevent the formation of gaseous cyanogen chloride. An inverted "T" shaped perforated pipe was installed in the tanker to provide uniform, forced air agitation of the mixture. This agitation accelerates the reaction and prevents the precipitation of cyanides. Treatment is continued for a period lasting approximately one week.

Is this how they drag the acid tanks into closure by being an appurtenance to these tanks?

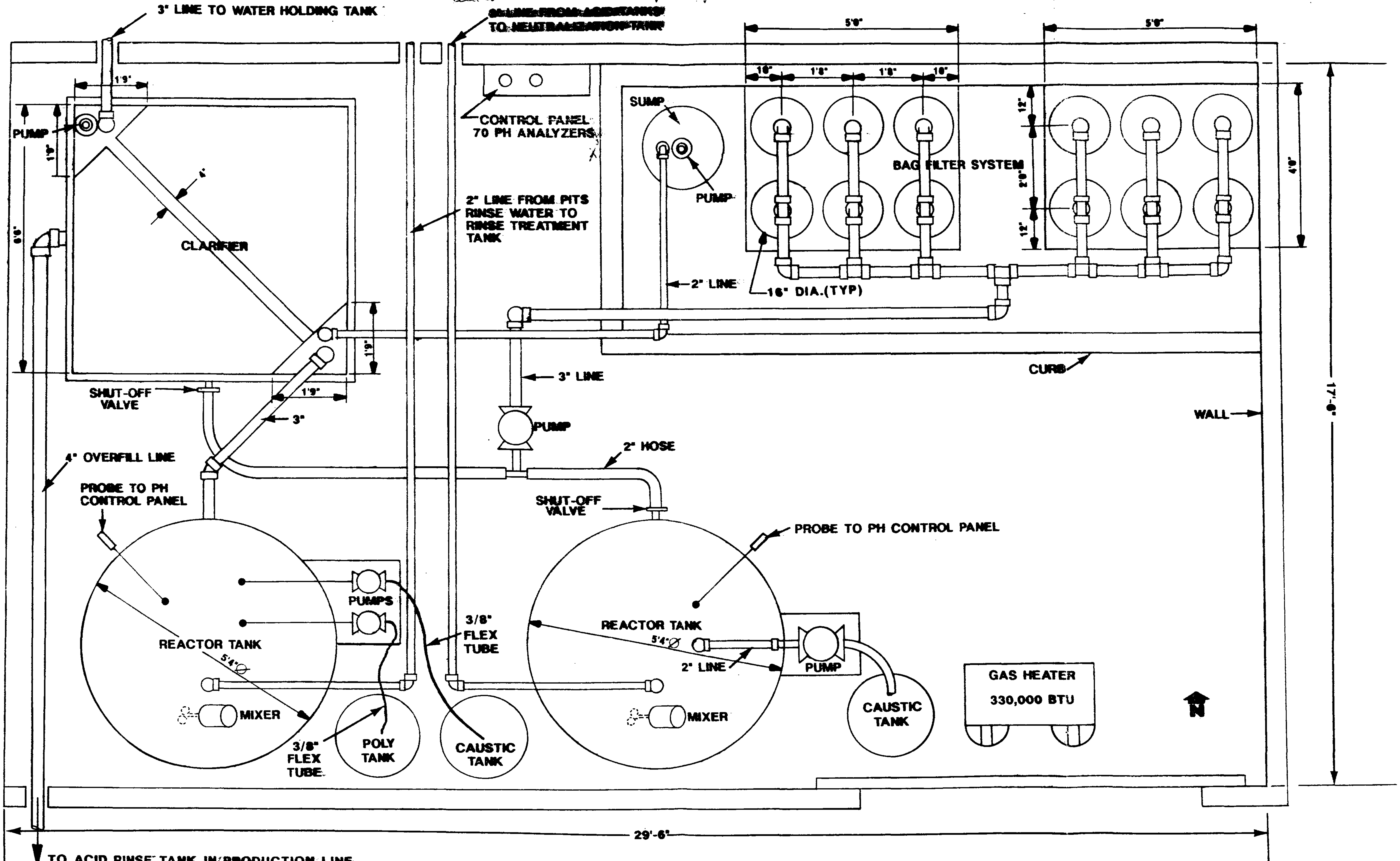
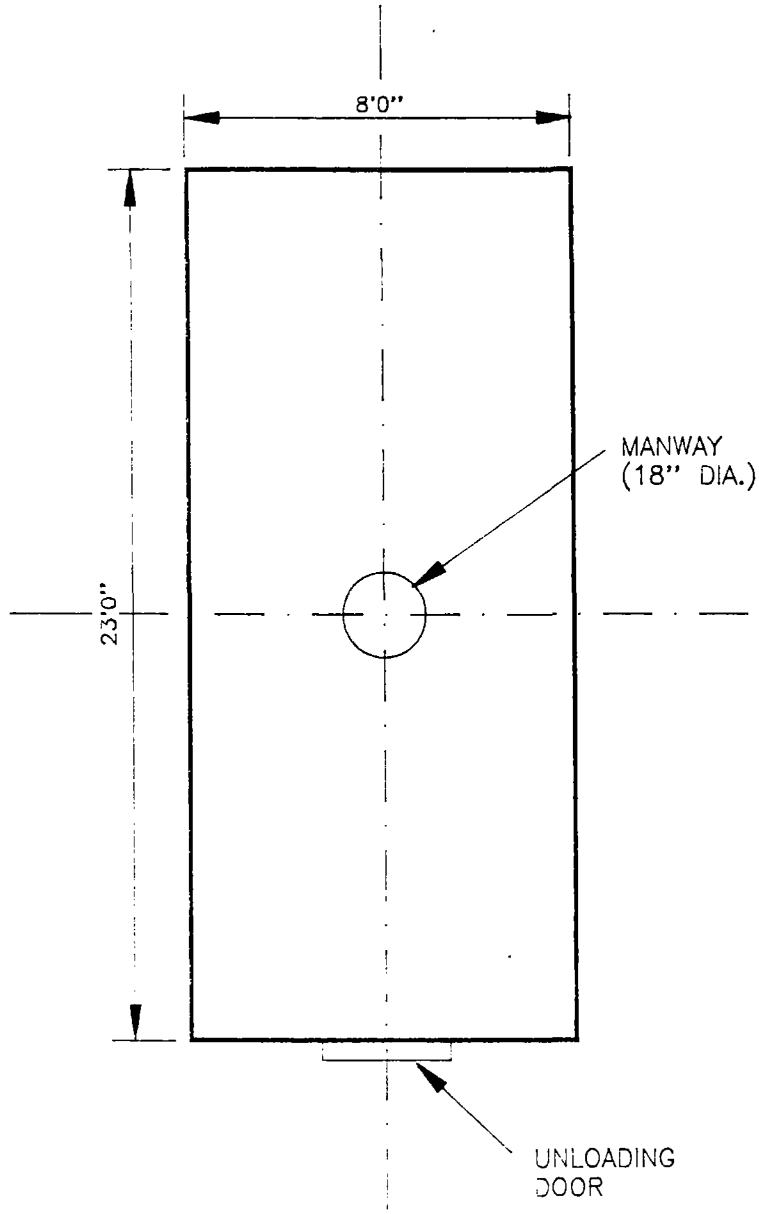


FIGURE 1-3. Plan View of On-Site Acid Treatment Unit.



WESTON MANAGERS DESIGNERS/CONSULTANTS	Three Hawthorn Parkway Vernon Hills, Illinois 60061	FIGURE 1–4	PLAN VIEW OF ON–SITE CYANIDE DESTRUCTION TANK TECHALLOY Union, Illinois

REV.

46090

Following treatment, the waste was sampled and analyzed on-site by Met-Chem Consultants, Inc. for the presence of cyanide. When it was confirmed that no detectable cyanide was present, the treated plating rinse was returned to the drums, transported to the on-site acid treatment facility and pumped through the bag filter system.

1.1.3 Acid Pits

Acid pit is located within the acid house as shown in Figure 1-2. Acid pit has a small and a large lined holding tanks. The configuration of the holding tanks within the acid pit is shown in Figure 1-5. The pit is used for holding water from both the process and rince area. The tanks are lined and are constructed of concrete. The acid pit is 140 feet long x 9.27 feet wide and 2.8 feet deep. Acid pit is used for holding the water from the process and the rince areas. 27181 gallons

Water from the pit is pumped periodically to a truck and hauled to a commercial hazardous waste treatment facility.

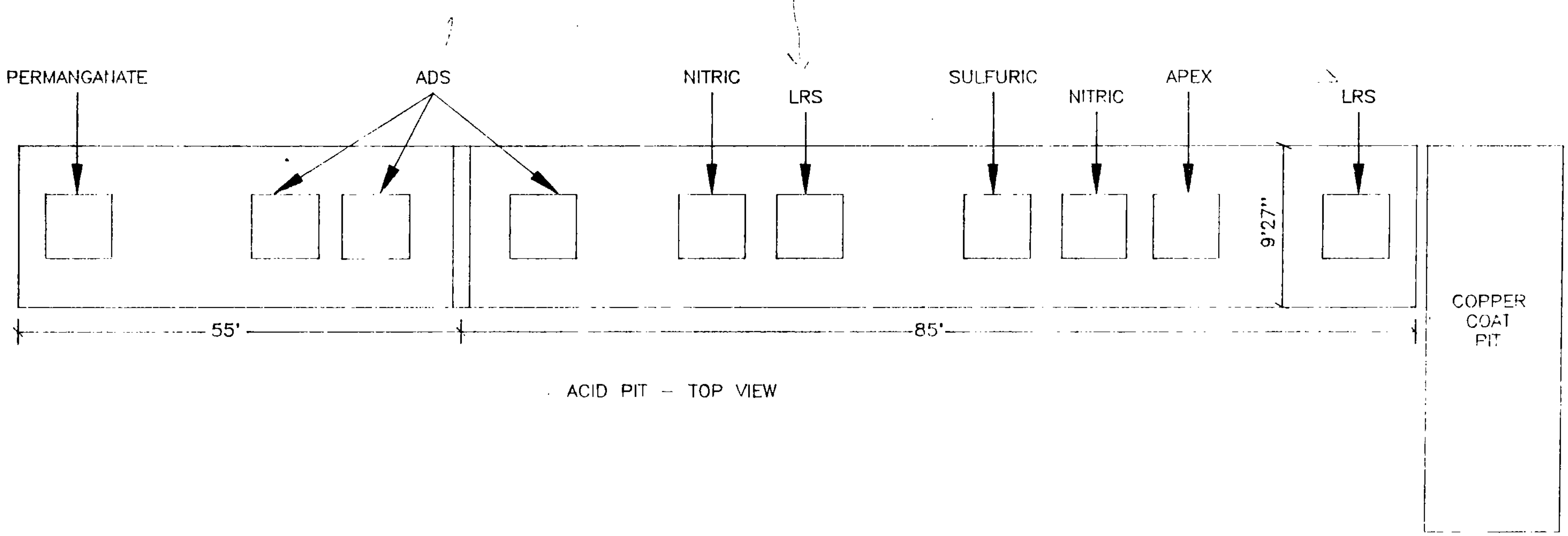
1.2 WASTE INVENTORY

This section provides estimates of the amounts of hazardous waste currently present in each unit, as well as the average and maximum amounts of waste treated in each unit.

1.2.1 On-Site Acid Treatment Facility

Several components of the on-site unit contain residuals that are classified either as D002 or as F006 hazardous wastes. Appendix C provides specific analytical data for the waste inventory of the acid treatment facility. Appendix C-1 presents the chemical characteristics of the untreated D002 waste that is remaining in the three reactor tanks. Similarly, Appendix C-3 presents the chemical characteristics of the F006 sludge that is present in the clarifier. The analysis of the F006 sludge was performed on a filtered, dried sample; therefore the solids content of the clarifier sludge is much less than shown in Appendix C-3.

Table 1-2 lists the components of the on-site treatment facility and presents estimates of the amount of residues each component contains. An estimated total of 630 gallons of waste is present in the system. The maximum waste inventory occurs when the plant was in operation. The maximum reactor tank contents is 1,000 gallons, and the maximum sludge inventory (after treatment) is 12 cubic yards, which is the capacity of the temporary sludge hopper. An average treatment rate of approximately 25,000 gallons per year was recorded over a four-year period from 1984-1987.



ACID PIT – TOP VIEW

WESTON
MANAGERS DESIGNERS/CONSULTANTS

Three Hawthorn Parkway
Vernon Hills, Illinois
60061

FIGURE
1–5

ACID PIT CONFIGURATION
TECHALLOY
Union, Illinois

REV. A

24790

TABLE 1-2

HAZARDOUS WASTE INVENTORY
ON-SITE ACID TREATMENT FACILITY

Component	Residual Level (in)	Estimated Volume (gal)	Waste Type
Reactor Tanks (2)	8	225	D002
Rinsewater Tank	6	85	D002
Clarifier	12	320	F006
Bag Filter Unit	none	none	—

Total Hazardous Waste Inventory = 630 gallons

1.2.2 Cyanide Destruction Unit

There are currently no wastes in the cyanide destruction tanker. After its most recent use, the cyanide destruction tanker was thoroughly rinsed with clean water, and the rinsate was treated at the on-site unit. The tanker is empty, with only a thin film of residue on the inside of the tank most likely consisting of metal-complexed precipitates. This residue will be removed during decontamination activities described in Section 2.3.2.

The tanker has had a maximum waste inventory of 2,000 gallons, which is the maximum volume of copper plating rinse water (D003) treated in the unit at one time. The unit has been utilized for cyanide destruction on four occasions, and a total volume of 7,800 gallons has been treated.

what about Acid Pit ?

1.3 CLOSURE PERFORMANCE STANDARD

Closure of the Techalloy Company, Inc., Union hazardous waste management facilities has been specified in a manner that:

- Minimizes the need for further maintenance; and
- Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground, surface water, or atmosphere.

This performance standard will be accomplished by appropriate waste inventory handling and disposal, thorough decontamination procedures, and a verification sampling and analysis plan.

SECTION 2

CLOSURE PLAN

This section presents details of all procedures and methods to be utilized in the closure of the two RCRA-regulated hazardous waste management units at Techalloy.

2.1 PRECLOSURE SAMPLING AND ANALYSIS

Before closure activities are initiated, preclosure soil sampling and analysis will be conducted within and around the footprint of the cyanide tanker, acid pit and acid treatment facility. These samples will be obtained in order to determine if any spillage has occurred which could have impacted the surrounding soils. Although no spills are known to have occurred, sampling and analysis will be performed as a precautionary measure, due to the potential of direct contact between the waste and the soils around the tanker. No preclosure sampling is necessary at the on-site acid treatment facility, because the potential for direct contact does not exist. Thirteen sample locations have been identified as shown on Figure 1-2. These locations have been selected in consideration of areas that would likely receive contamination if spillage actually occurred. It is not necessary to collect background samples, because undisturbed soils do not contain detectable levels of cyanide.

6-12" + 18-24"

Two samples will be obtained from each of the eight sample locations around cyanide destruction units, one sample from a depth interval of 0-3 inches and the other from the 3-6 inch interval. Two samples will be obtained from each of the five sample locations around acid house, one sample from a depth interval of 2-3 feet and another from 3-4 feet interval.

use TCLP not EP Tox, also add for pH, cyanides + volatiles + copper + nickel

The samples collected around the acid house will be analyzed for RCRA metals by the procedure outlined in Section 2.4.3. The samples from 2-3 feet interval will be analyzed first. If levels of heavy metals in these samples exceed safe drinking water standards, the samples from the 3-4 inch interval will be analyzed. If significant levels of heavy metals are detected, soils will be removed in accordance with the procedure given in Section 2.2.1. Soil sampling and analytical methods are presented in Section 2.4.3.

analyze for the same parameters as above

The samples collected around the cyanide destruction unit will be analyzed for total cyanide and reactive cyanide. Samples from 0-3 inch interval will first be analyzed. If levels of cyanide in these samples exceed 300 mg/kg the samples from the 3-6 inch interval will be analyzed. If significant concentrations of cyanides are detected, soils will be removed in accordance with the procedures given in Section 2.2.1. Soil sampling and analytical methods are present in Section 2.4.3. The samples will be analyzed for total cyanide and reactive cyanide. Samples from the 0-3 inch interval will first be analyzed. If levels of cyanide in these samples exceed 300 mg/kg (see Section 2.2.1), the samples from the 3-6 inch interval will be analyzed. If significant concentrations of cyanides are detected, soils will be removed

sample 6-12" + 18-24"
sample both intervals
no matter what

in accordance with the procedures given in Section 2.2.1. Soil sampling and analytical methods are presented in Section 2.4.3.

2.2 REMOVAL OF WASTE INVENTORY

This section details the procedures that will be employed in the removal (if necessary) of soils around the acid house and cyanide tanker, and in the removal of waste residuals remaining in both treatment units.

2.2.1 Soil Removal

2.2.1.1 Acid Treatment Unit and Acid Pit

Most of the heavy metals moving through the soil will be exchanged with a cation in the soil and be removed from the spill. It is unlikely that any heavy metal waste, if spilled will have reached the aquifer. The soil sampling location specified in Figure 1-2 are adequately located to encompass the area of potential contamination. will set State Agency inspection

The clean-up criteria for heavy metals in the soil will be based on safe drinking water standards. If analytical results indicate that this level is exceeded at any sample location, soils within a 10-foot radius of the affected location will be removed. If the level exceeded in the 2-3 feet horizon, the depth of soil removal will be 4 feet. If the level exceeded in the 3-4 feet horizon, the depth of spill removal will be 5 feet. No! Must determine area and depth by sampling. Can't determine now!

Standard construction equipment (such as backhoe) will be utilized for soil removal. There is adequate space available on-site for a soil loading area to be localized adjacent to the excavation. The soil will be excavated and placed directly into a lined dump trailer for transportation to a RCRA hazardous waste landfill, such as Peoria Disposal Company Landfill in Peoria, Illinois. All heavy equipment contacting contaminated soil will be scraped free of waste residues when the soil removal is completed. These residues will be treated as hazardous and added to the excavated material. After excavation is completed, verification sampling and analysis will be conducted as described in Section 2.4.1. When it is determined that the affected area has been adequately decontaminated, clean fill will be imported and the area will be regraded and restored to its former condition.

2.2.1.2 Cyanide Destruction Unit

Because copper cyanide is insoluble in water, its potential for migration is extremely low. It is unlikely that any cyanide-bearing waste, if spilled, will have migrated either horizontally or vertically. Therefore, the soil sampling locations specified in Figure 1-2 are adequately located to encompass the area of potential contamination.

NY state agency will visit site after receipt of results

The cleanup criteria for cyanide in the soil will be 300 mg/kg, which is the human health-based level specified in EPA 530/SW-87-001, the RCRA Facility Investigation (RFI) Guidance. If analytical results indicate that this level is exceeded at any sample location, soil within a 10-foot radius of the affected location(s) will be removed. If significant cyanide concentrations (exceeding 300 mg/kg) are detected in the 0-3 inch horizon, the depth of soil removal will be to 6 inches. Similarly, if significant contamination is detected in the 3-6 inch horizon, the depth of soil removal will be 12 inches. It is extremely unlikely that cyanide, if present at all, will have migrated downward further than a few inches.

Standard construction equipment (such as a backhoe) will be utilized for soil removal. If necessary, the tanker will be moved to facilitate excavation. There is adequate space available on-site for a soil loading area to be located adjacent to the excavation. The soil will be excavated and placed directly into a lined dump trailer for transport to a RCRA hazardous waste landfill, such as the Peoria Disposal Company landfill in Peoria, Illinois. All heavy equipment contacting contaminated soil will be scraped free of waste residues when the soil removal is completed. These residues will be treated as hazardous and added to the excavated material. After excavation is completed, verification sampling and analysis will be conducted as described in Section 2.4.1. When it is determined that the affected area has been adequately decontaminated, clean fill will be imported, and the area will be regraded and restored to its former condition.

2.2.2 Treatment Unit Residuals Removal

Prior to the initiation of decontamination activities, the waste inventory at the on-site acid treatment facility and acid pit (Table 1-1) will be removed and transported for off-site treatment and disposal. Observation of the remaining sludges/liquids indicates that they are pumpable; therefore, the bottom drain valves on the tanks will be fitted with a hose and pump to allow the tank contents to be pumped into 55-gallon drums. The drums utilized will be of corrosion-resistant material meeting U.S. D.O.T. specifications. If possible, space will be made available for these containerization activities to be conducted within the curbed bag filter area.

There will be no mixing of wastes from any treatment unit component during these activities. Wastes from the reactor tanks, rinsewater tank, and clarifier will be collected and drummed separately. There also will be no direct worker contact with the waste during this operation.

It is anticipated that Techalloy personnel will conduct this phase of the closure. The drummed wastes will then be transported to an appropriate RCRA hazardous waste management facility. Techalloy currently contracts Envirite Corporation and Clean Harbors, Inc. for disposal of their untreated acid wastes and will utilize these off-site facilities for disposal of the remaining on-site treatment unit wastes.

2.3 DECONTAMINATION ACTIVITIES

This section discusses the procedures involved in decontaminating all three units. The objective of these procedures is to decontaminate the components of three units in a controlled manner which will allow for appropriate management of waste and process residues that may be present on the components and associated structures. All potentially contaminated surfaces, tanks, pipes, and associated appurtenances will be thoroughly cleaned, and the adequacy of decontamination will be confirmed by verification sampling and analysis described in Section 2.4.

2.3.1 On-Site Acid Treatment Facility

All components of the acid treatment facility listed in Section 1.1.1 will be decontaminated. In general, sequential decontamination activities will focus on four areas of the unit:

- The fiberglass tanks (two 1,000-gallon tanks and one 500-gallon tank);
- The rectangular steel clarifier;
- The bag filter system area; and
- All associated piping.

The tanks and clarifier will be pressure-washed with a mixture of water and an alkaline-based cleanser, such as Alconox. Mechanical scraping or brushing will be performed if pressure washing does not remove all residues. After pressure washing, the surfaces will be triple-rinsed with clean water, and rinsate samples from the third rinse will be collected as part of the verification sampling and analytical plan described in Section 2.4.2. All rinsate will be collected, drummed, and analyzed. The rinsate will be managed as a hazardous waste, and, if required by the analytical results, disposed as a hazardous waste.

In order to facilitate clarifier decontamination, one side panel will be cut out with an acetylene torch to provide easier internal access to the tank. The open-top reactor tanks are small enough such that access from above is adequate to conduct the decontamination activities.

The filtrate collection area and appurtenant structures within the bag filter system will be decontaminated by pressure washing and rinsing as previously described. Containment of the rinsate will be provided by the existing curb around the filter area. Rinsate will be collected from the existing sump and will be analyzed in order to determine if it should be classified as a hazardous waste.

The final decontamination task for the on-site acid treatment unit is the flushing of the piping system that interconnects the various components. The pipes will be permanently disconnected from the influent process area and will be flushed with an alkaline detergent. Rinsate will be collected and managed as a hazardous waste as previously described. To ensure that the treatment system remains closed, the pipes will be either capped/plugged or removed and scrapped.

All the tools that will come in direct contact with the waste during decontamination process will be decontaminated by washing them with a mixture of water and Alconox. After washing, the tools will be triple-rinsed with decon water. The decontamination water will be collected and put into the acid pit.

2.3.2 Cyanide Destruction Unit

The procedures employed for decontamination of the acid treatment system tanks will be similarly employed for decontamination of the cyanide destruction tanker. The interior of the tank will be pressure-washed with a detergent solution, and rinsate will be collected through the outlet valve at the bottom of the tanker. Confined space entry procedures (Appendix D) will be utilized, and workers entering the tanker will wear Level B personnel protective equipment. A detailed health and safety plan for all closure activities will be prepared and will include procedures for providing excess air to interior spaces as fully as possible prior to entry. Strict adherence to the health and safety plan will be maintained. Rinsate will be collected, analyzed, and managed appropriately.

If the residue present on the interior of the tanker cannot be adequately removed by pressure washing, mechanical scraping or scrubbing will be used. Special attention will be given to the interior floor of the tanker, where precipitates, if present, would most likely form. Because there are no other structures associated with the cyanide destruction unit, decontamination of the tanker itself comprises the decontamination of this RCRA unit. The tanker will be scrapped or salvaged as appropriate, after closure activities have been completed and approved by IEPA.

2.3.3 Acid Pit

The acid pit will be pressure-washed with a mixture of water and alconox. Mechanical scraping and brushing will be performed if pressure washington does ot remove all residues. After pressure washing, the surfaces will be triple-rinsed with clean water, rinsate sample from the third rinse will be collected as part of the verification sampling and analytical plan described in Section 2.4.2. The rinsate will be managed as a hazardous waste, and, if required by the analytical results, disposed as a hazadous waste. After being cleaned, must inspect [illegible] to check for cracks, gaps, joints, etc. where samples of underlying soil should be taken

2.3.4 Acid Rinse Tanks

Acid rinse tanks on the production line will be pressure washed with a mixture of water and alconox. Mechanical scraping and brushing will be performed if pressure washing does not remove all residues. After pressure washing the surfaces will be triple-rinsed with clean water. After completion of decontamination of the tanks they would be put back on-line.

2.4 VERIFICATION SAMPLING AND ANALYSIS

In order to document the adequacy of all waste removal and equipment decontamination activities, a closure verification sampling and analysis plan has been developed. This plan addresses procedures and methods to be utilized in sampling and analyzing soil, rinsate, and tank surfaces.

2.4.1 Soil Sampling

Verification soil samples will be obtained only if contaminated soils are removed. The purpose of these samples will be to document that significantly contaminated soils, if present, were removed from the tanker area. Therefore, samples will be obtained from the bottom and edges of the excavated area(s) in order to demonstrate that contaminated soils have been removed. The exact number and location of the samples cannot be specified, because the extent of soil removal, if required, is unknown. Verification samples from the bottom of the excavation will be obtained from locations as near as possible to the original sample locations, and other samples on the sides of the excavation will be obtained at approximate 10-foot intervals. Samples will be analyzed for total and reactive cyanide.

In the unlikely event that significant contamination is detected in the verification samples, additional soil removal will take place in those contaminated areas. Verification samples will again be obtained and analyzed, and if further excavation is required, the scope of this removal activity will be re-evaluated and submitted as an addendum to this closure plan.

2.4.2 Tank and Rinsate Sampling

Rinsate from each treatment unit component will be sampled during decontamination efforts. One sample will be collected from each acid treatment facility component, from the cyanide destruction tanker, acid pit and from piping associated with these systems. (nine samples total). The rinsate will be analyzed for total concentrations of the eight RCRA metals. Analytical methods are referenced in Section 2.4.3.

The results of these analyses will be used to determine if the decontamination was adequate. If any metals are present in excess of the EP Toxicity characteristic parameters (40 CFR 261.24, Table 1), additional decontamination and subsequent verification sampling will be conducted. TCLP

As an added measure to confirm proper decontamination, the pH of the rinsate from the third rinse of the tanks will be checked on-site with a field pH meter. A meter reading showing a significant departure from neutrality (pH 7) would indicate the presence of acidic or alkaline residues. Therefore, a reading not within 2 pH units of neutrality will indicate that tank surfaces must undergo further decontamination.

2.4.3 Sampling and Analytical Methods

All soil samples from both the preclosure and verification phases will be collected and analyzed in accordance with the guidelines in the U.S. EPA SW-846, Test Methods for Evaluating Solid Waste, Second Edition. U.S. EPA analytical method 9010 will be utilized to determine the concentrations of total and reactive cyanide in the cyanide destruction tank. Extraction Procedure Toxicity Test (EP Tox, U.S. EPA 1986) will be utilized to determine the concentration of eight RCRA metals in the soils around the acid house.

Rinsate analyses for all of the RCRA metals will utilize U.S. EPA methods specified in 40 CFR 261, Appendix 3, Table 2. All sample preservation, shipment, and QA/QC protocols specified in U.S. EPA SW-846 will be utilized. In addition, U.S. EPA chain-of-custody procedures will be followed to ensure sample integrity. All sampling and analytical work will be performed by WESTON-Gulf Coast Laboratories, Inc. in University Park, Illinois.

2.5 CERTIFICATION

Following closure of the on-site acid treatment facility, acid pit and the cyanide destruction tanker, Techalloy and an independent registered Professional Engineer in the State of Illinois will submit certification statements indicating that these units have been closed in accordance with the specifications of the IEPA-approved plan. The certification document will include results of the preclosure and verification sampling and analysis and will provide documentation regarding the proper removal of the existing waste inventory.

Techalloy and an independent registered Professional Engineer in the State of Illinois will submit a certification statement to the integrity of the storage system for the following hazardous waste storage units:

- Two pickling waste water tanks.
- ADS sludge stored in drums.
- Plating filters stored in drums.
- Metal hydroxide sludge stored in a hopper (discontinued since August 1988).
- SR6 sludge - special waste.
- Waste oils stored in drums.
- Molybdenum Disulfide process filters - special waste.

2.6 SCHEDULE FOR CLOSURE

Figure 2-1 presents the anticipated schedule for completing closure of the two RCRA-regulated units at the Techalloy, Inc. facility. This schedule provides a sequence of activities to be completed within 180 days upon final closure plan approval by IEPA. The approximate total time required for performing all anticipated closure activities is 12 weeks.

2.7 STATUS AFTER CLOSURE

Because this closure plan specifies the removal of all hazardous wastes and hazardous waste residuals from the on-site acid treatment facility, acid pit and cyanide destruction tanker, post-closure monitoring and maintenance of these units will not be required. After the closure the facility will operate as a generator and the facility will generate and store more than 1,000 kg/month to less than 90 days.

SECTION 3

CLOSURE COST ESTIMATE

It is estimated that the cost of implementing a worst-case closure of these units is $18,740. Table 3-1 provides a line-item breakdown of this closure cost estimate. This cost estimate is based upon third-party implementation of the anticipated worst-case scenario, involving disposal of the existing waste inventory as well as 5 cubic yards of contaminated soil.

TABLE 3-1

CLOSURE COST ESTIMATE

Task		Cost
1.	Removal of Waste Inventory	$2,400
2.	Preclosure Sampling and Analysis	$1,040
3.	Soil Removal	$1,000
4.	Decontamination of On-Site Acid Treatment Facility	$3,870
5.	Decontamination of Cyanide Destruction Tanker	$1,600
6.	Verification Sampling and Analysis	$1,830
7.	Closure Certification	$7,000
	Total Closure Cost Estimate:	$18,740

RCRA PERMIT INFORMATION FORM

FOR AGENCY USE ONLY
Log No:
Received:
Reviewer:

I. SITE IDENTIFICATION

Illinois EPA Identification No. 1110900003

USEPA Identification No. ILD 00 5178975

Facility Name: Techalloy, Inc.

Facility Location: P.O. Box 423 Olson & Jefferson Roads
(Street Address)

Union, Illinois 60180 McHenry
(City) (State) (Zip Code) (County)

Facility Mailing Address (if different from facility location) Same as above
(Street Address)

(City) (State) (Zip Code)

Contact Person: Mr. George Miller Maintenance Superintendent
(Name and Title)

Telephone Number: (815) 923-2131

II. APPLICANT INFORMATION

Owner Information

Name: Techalloy Illinois, Inc.

Address: P.O. Box 423
(Street Address)

Union, Illinois 60180
(City) (State) (Zip Code)

Operator Information

Name: Mr. George Miller

Address: Techalloy, Inc. P.O. Box 423
(Street Address)

Union, Illinois 60180
(City) (State) (Zip Code)

III. INFORMATION SPECIFIC TO THE FACILITY

A. Activities conducted by applicant which require a RCRA permit. (Please check the appropriate lines)

1. Storage in
   X a. Containers
   X b. Tanks
   __ c. Waste Piles
   __ d. Surface Impoundments

2. Treatment in
   X a. Containers
   X b. Tanks
   __ c. Surface Impoundments
   __ d. Incinerators
   __ e. Other (please explain)

3. Disposal in
   __ a. Waste Pile
   __ b. Surface Impoundment
   __ c. Landfill
   __ d. Underground well

B. SIC codes which best reflect principal products or services provided by facility (maximum of 4) 3496 3471 3479

C. Brief description of nature of the activities carried out at the facility produces steel and nickel-alloy wire. Unprocessed hot-rolled and annealed and rod is drawn into wire of specific diameters and then is wound into coils or spools. Also utilizes copper coating and petroleum naptha for wire brightening.

D. List of permits received from IEPA (please attach).

Part A permit

E. A topographic map (or other map if a topographic map is unavailable) extending one (1) mile beyond the property boundaries of the facility, depicting the facility and each of its intake and discharge structures, each of its hazardous waste treatment, storage or disposal facilities, each well where fluids from the facility are injected underground, and those wells, springs, other surface water bodies and drinking water wells listed in public records or otherwise known to the applicant within one fourth mile of the facility property boundary.

IV. ALTERNATIVE CHOSEN TO MEET THE REQUIREMENTS OF 35 IAC 703.157(f)

The above-referenced facility will meet the requirements of 35 IAC 703.157(f) in the following manner (check one)

_____A. Pursue a final RCRA permit for the hazardous waste management activities conducted at the facility. Part B of the RCRA permit application for the unit(s) is enclosed.

__X__B. Close the hazardous waste storage and/or treatment units at the facility prior to November 8, 1992.

1. Estimated date that closure plan will be submitted to IEPA for approval. Nov.8, 1992

2. Estimated date that closure is expected to begin. May 8,1992

_____C. Pursue a final RCRA permit for some of the interim status hazardous waste management units at the facility, while closing the rest of them.

1. Units for which a final RCRA permit is desired (and for which Part B of the RCRA permit application is being submitted).

____

____

2. Units which will be closed

a. Units for which a closure plan is being submitted at this time. ______________________________

____

b. Units for which a closure plan will be submitted in the future (NOTE THAT THESE UNITS MUST BE INCLUDED IN THE APPLICATION REQUIRED FOR THE UNITS IN ITEM IV.C.1 ABOVE)

____

____

i. Estimated date of closure plan submittal. ______________________________

_____D. Make a demonstration that the original Part A for the facility was filed in error (i.e., the application was filed as a protective measure). The basis for this demonstration is that (1) hazardous waste generated at the facility has never been stored on-site for greater than ninety (90) days or (2) hazardous waste has not been treated or disposed at the facility. The enclosed form entitled <u>Facility Part A Withdrawal Request Form</u> (IL 532-1489 LPC 233 8186) must be completed and submitted to the Agency if the facility desires to pursue this alternative.

_____E. Other (please explain)_______________________________________

____

____

____

____

List the documents which accompany this submittal

1.______________________________________

2.______________________________________

3.______________________________________

4.______________________________________

5.______________________________________

6.______________________________________

7.______________________________________

8.______________________________________

V. POTENTIAL RELEASES FROM SOLID WASTE MANAGEMENT UNITS

Please complete Attachment 1. If you choose not to complete this form, please attach an explanation for this decision. If you have already completed this form and submitted it to the Agency, please include a copy of it with the information form being submitted.

Copy Enclosed

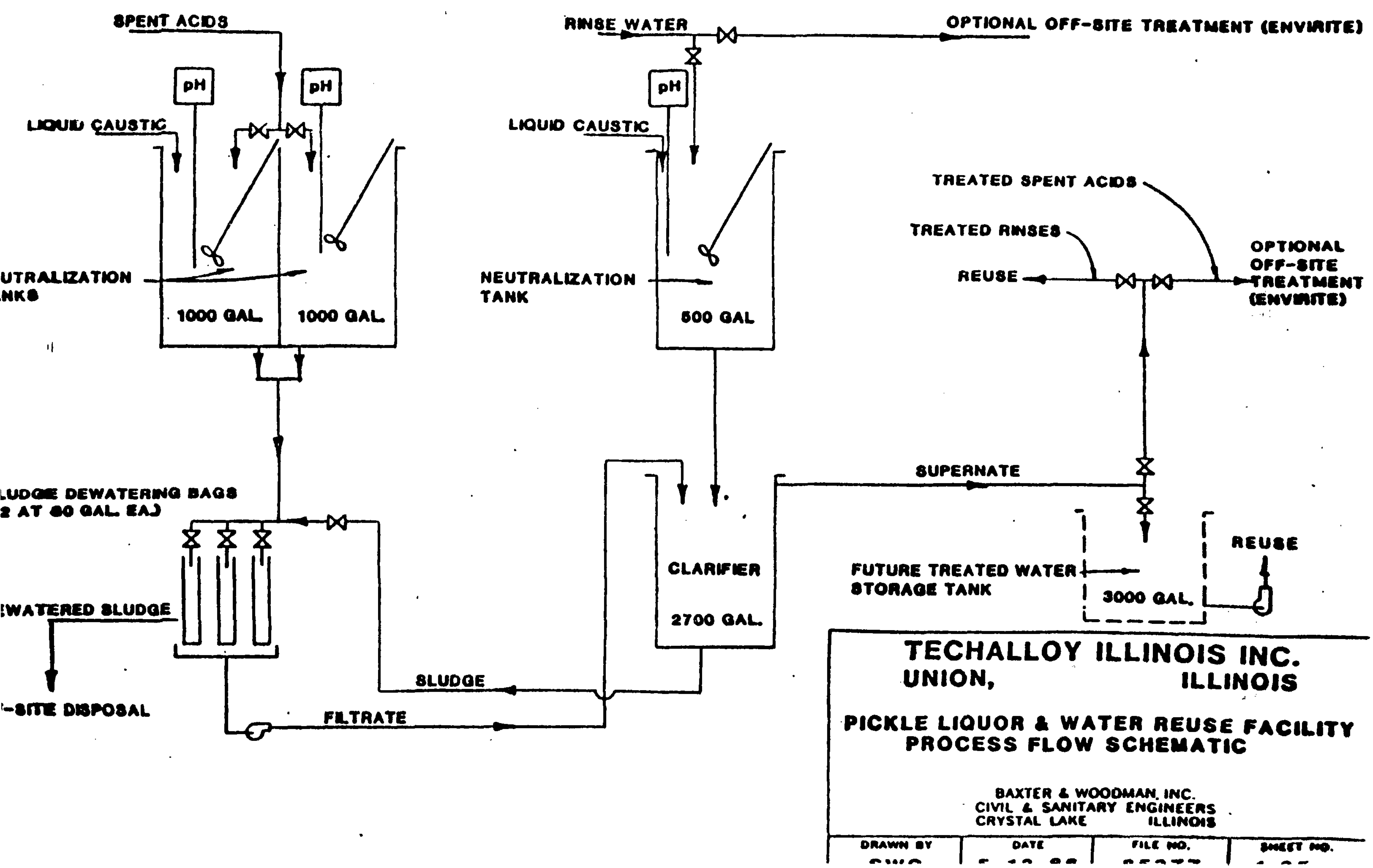
VI. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my kowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

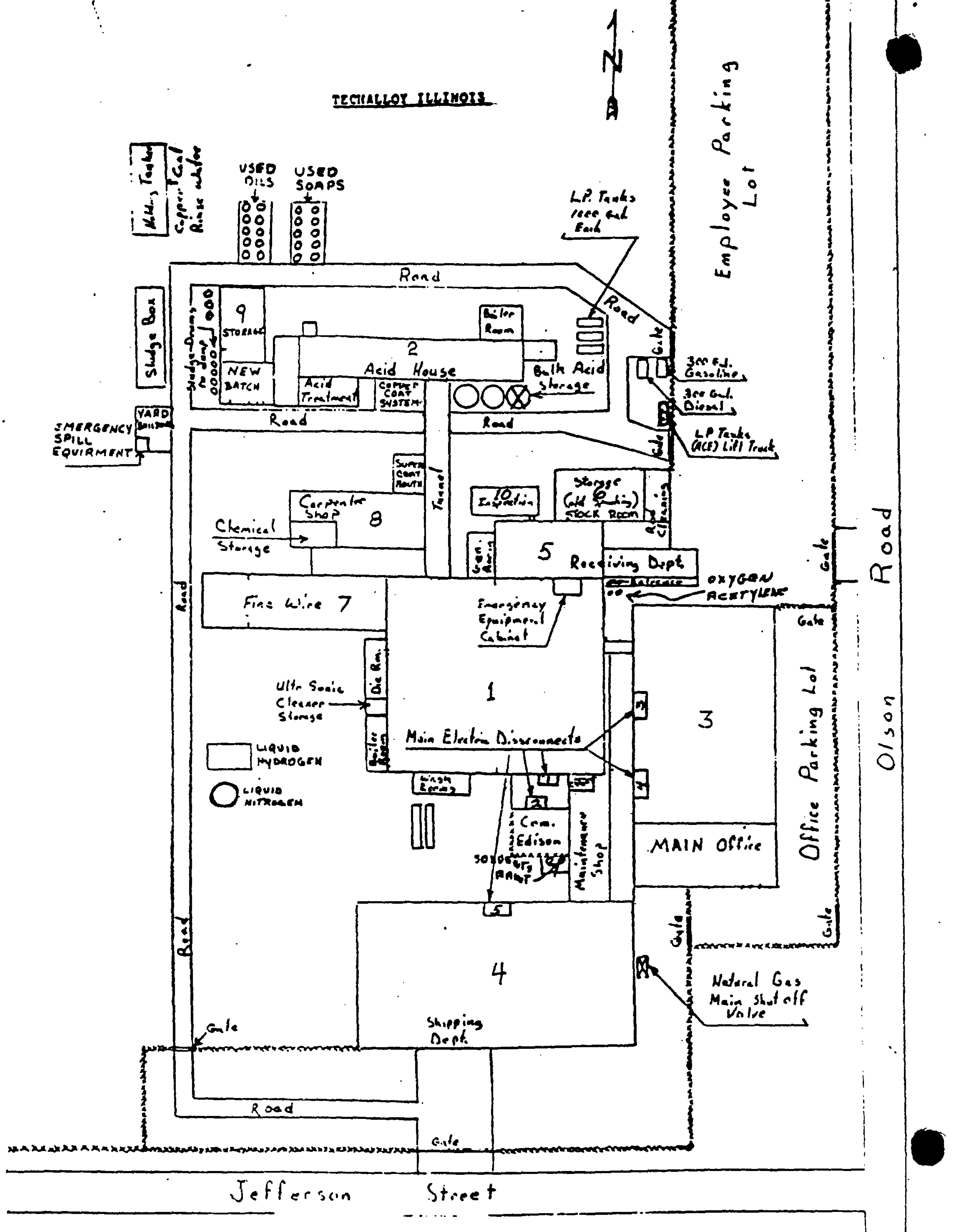
George R. Miller 9-30-88
(Name and Title) (Date)

Maintenance Superintendent
Techalloy, Inc.

JM:mab/514j/sp/1-3


SPENT ACIDS
RINSE WATER
OPTIONAL OFF-SITE TREATMENT (ENVIRITE)
pH
pH
pH
LIQUID CAUSTIC
LIQUID CAUSTIC
TREATED SPENT ACIDS
TREATED RINSES
OPTIONAL OFF-SITE TREATMENT (ENVIRITE)
REUSE
NEUTRALIZATION TANK
1000 GAL.
1000 GAL.
500 GAL
SUPERNATE
CLARIFIER
2700 GAL.
FUTURE TREATED WATER STORAGE TANK
3000 GAL.
REUSE
SLUDGE
FILTRATE
TECHALLOY ILLINOIS INC.
UNION, ILLINOIS
PICKLE LIQUOR & WATER REUSE FACILITY
PROCESS FLOW SCHEMATIC
BAXTER & WOODMAN, INC.
CIVIL & SANITARY ENGINEERS
CRYSTAL LAKE ILLINOIS
DRAWN BY
DATE
FILE NO.
SHEET NO.

TECHALLOY ILLINOIS



Attachment 1

CERTIFICATION REGARDING POTENTIAL RELEASES FROM SOLID WASTE MANAGEMENT UNITS

FACILITY NAME: ______________________________

EPA I.D. NUMBER: ______________________________

LOCATION CITY: ______________________________

STATE: ______________________________

1. Are there any of the following solid waste management units (existing or closed) at your facility? NOTE - <u>DO NOT INCLUDE HAZARDOUS WASTES UNITS CURRENTLY IDENTIFIED IN THE PART A APPLICATION, PART B APPLICATION, OR ANY CLOSURE PLAN FOR THE FACILITY</u>.

	YES	NO
- Landfill	___	___
- Surface Impoundment	___	___
- Land Farm	___	___
- Waste Pile	___	___
- Incinerator	___	___
- Storage Tank (Above Ground)	___	___
- Storage Tank (Underground)	___	___
- Container Storage Area	___	___
- Injection Wells	___	___
- Wastewater Treatment Units	___	___
- Transfer Stations	___	___
- Waste Recycling Operations	___	___
- Waste Treatment, Detoxification	___	___
- Other ______________		

2. If there are "yes" answers to any of the items in Number 1 above, please provide a description of the wastes that were stored, treated or disposed of in each unit. In particular, please focus on whether or not the wastes would be considered as hazardous wastes or hazardous constituents under RCRA. Also include any available data on quantities or volume of wastes disposed on and the dates of disposal. Please also provide a description of each unit and include capacity, dimensions, location at facility, provide a site plan if available.

____

____

____

____

____

NOTE: Hazardous waste are those identified in 40 CFR 261. Hazardous constituents are those listed in Appendix VIII of 40 CFR Part 261.

3. For the units noted in Number 1 above and also those hazardous waste units identified in your Part A, Part B or any closure plan, please describe (for each unit) any data available on any prior or current releases of hazardous wastes or constituents to the environment that may have occurred in the past or that may still be occurring.

Please provide the following information:

a. Date of release
b. Type of waste released
c. Quantity or volume of waste released
d. Describe nature of release (i.e., spill, overflow, ruptured pipe or tank, etc.)

4. In regard to the prior releases described in Number 3 above, please provide (for each unit) any analytical data that may be available which would describe the nature and extent of environmental contamination that exists as a result of such releases. Please focus on concentrations of hazardous wastes or constituents present in contaminated soil or groundwater.

I certify under the penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the submittal is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. (42 U.S.C. 6902 et seq. and 40 CFR 270.11(d))

Typed Name and Title

Signature

Date

JM:mab/514j/sp/4-5

Reply To E.P.A.

LAW OFFICES
DRINKER BIDDLE & REATH
PHILADELPHIA NATIONAL BANK BUILDING
BROAD AND CHESTNUT STREETS
PHILADELPHIA, PA. 19107
TELEX: 834684 • DEEEMAC
(215) 988-2700

SUITE 900
1752 N STREET, N.W.
WASHINGTON, D.C. 20036
(202) 429-7400

405 PARK AVENUE
NEW YORK, N.Y. 10022
(212) 838-8800

DIRECT DIAL (215) 988- 2614

March 13, 1986

Mr. George Miller
Maintenance Superintendent
Techalloy Illinois, Inc.
P.O. Box 423
Union, IL 60181

Mr. William Pigott
Techalloy Illinois, Inc.
P.O. Box 423
Union, IL 60181

Re: Response to EPA Request for Information

Dear Bill and George:

Enclosed for your review is a draft response to the EPA request for information. Please feel free to call if you have any questions.

Very truly yours,

Ginny Gibson-Mason

Virginia Gibson-Mason

VGM:ctf
Encl.

cc: Mr. Henry Lopes (w/encl.)
James Eiseman, Jr., Esq. (w/encl.)

CERTIFICATION REGARDING POTENTIAL RELEASES FROM SOLID WASTE MANAGEMENT UNITS

FACILITY NAME: Techalloy Illinois, Inc.

EPA I.D. NUMBER: ILD005178975

LOCATION CITY: Olsen and Jefferson Roads, Union

STATE: Illinois

1. Are there any of the following solid waste management units (existing or closed) at your facility? NOTE - <u>DO NOT INCLUDE HAZARDOUS WASTE UNITS CURRENTLY SHOWN IN YOUR PART A APPLICATION</u>

	YES	NO
• Landfill		X
• Surface Impoundment		X
• Land Farm		X
• Waste Pile		X
• Incinerator		X
• Storage Tank (Above Ground)		X
• Storage Tank (Underground)		X
• Container Storage Area	X	
• Injection Wells		X
• Wastewater Treatment Units		X
• Transfer Stations		X
• Waste Recycling Operations		X
• Waste Treatment, Detoxification	X	
• Other ______		

2. If there are "Yes" answers to any of the items in Number 1 above, please provide a description of the wastes that were stored, treated or disposed of in each unit. In particular, please focus on whether or not the wastes would be considered as hazardous wastes or hazardous constituents under RCRA. Also include any available data on quantities or volume of wastes disposed of and the dates of disposal. Please also provide a description of each unit and include capacity, dimensions and location at facility. Provide a site plan if available.

(See attached sheet.)

NOTE: Hazardous wastes are those identified in 40 CFR 261. Hazardous constituents are those listed in Appendix VIII of 40 CFR Part 261.

3. For the units noted in Number 1 above and also those hazardous waste units in your Part A application, please describe for each unit any data available on any prior or current releases of hazardous wastes or constituents to the environment that may have occurred in the past or may still be occurring.

Please provide the following information

a. Date of release
b. Type of waste released
c. Quantity or volume of waste released
d. Describe nature of release (i.e., spill, overflow, ruptured pipe or tank, etc.)

(See attached sheet.)

4. In regard to the prior or continuing releases described in Number 3 above, please provide (for each unit) any analytical data that may be available which would describe the nature and extent of environmental contamination that exists as a result of such releases. Please focus on concentrations of hazardous wastes or constituents present in contaminated soil or groundwater.

No such data is available.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the submittal is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. (42 U.S.C. 6902 et seq. and 40 CFR 270.11(d))

George Miller, Maintenance Superintendent
Typed Name and Title

George Miller
Signature

March 18, 1986
Date

Attachment to
Certification Regarding Potential Releases
from Solid Waste Management Units

2. Container Storage Area - In the area marked "A" on the site plan, which currently is used for drum storage of non-hazardous materials, drums of spent solvent were stored until approximately 1980.

Waste Treatment, Detoxification - For a period beginning in the early 1960's, Techalloy treated its acid wash water (spent pickle liquor) by neutralizing it with ammonia, then filtering it through a limestone-filled, in-ground holding bed lined with steel behind its acid house. The bed is marked with an "A" on the enclosed site plan. The filtered, neutralized acid then traveled through a ceramic drainage tile to a dry-bed "pond" where the liquid evaporated. The pond is approximately 20 feet wide and 150 feet long and is located at site "B" on the plan. The pickling solution consisted of dilute hydrofloric, sulfuric, muriatic and nitric acids. In 1969 or 1970, the drainage tile was closed off, but the limestone bed was still utilized in tandem with a clarifying tanker until approximately 1980.

Since 1968 or 1969, Techalloy has intermittently operated a copper coating process in which wire is washed first in a nickle plating bath of dilute nickle sulfate, then rinsed over a well with large quantities of water. The wire is then lowered into a dilute cyanide bath, then rinsed over the well with large quantities of water. These two baths sit in tanks in a well at site C on the plan. From that time until 1978, overflow from the well was occasionally drained by a sump pump, through a pipe and discharged onto the ground at location D on the plan. This method of removing overflow was changed in 1979 and the sump pump was removed.

Techalloy occasionally utilized 1,1,1-trichlorethane in its process for several years. For an unknown period of time, until 1978, Techalloy treated some of its spent solvent by evaporation outdoors on a cement pad, marked E on the site plan. Although Techalloy has no direct knowledge of this, it is possible that some of the TCE placed upon the pad for evaporation spilled onto the ground adjacent to the pad. The quantities of TCE evaporated in this way were small, and cannot be determined with any more precision from records in existence at the present time.

3. (a) In June, 1985, it was discovered that the well containing the pickling tanks had a leak through two cracks in the 10-inch thick wall of the well.

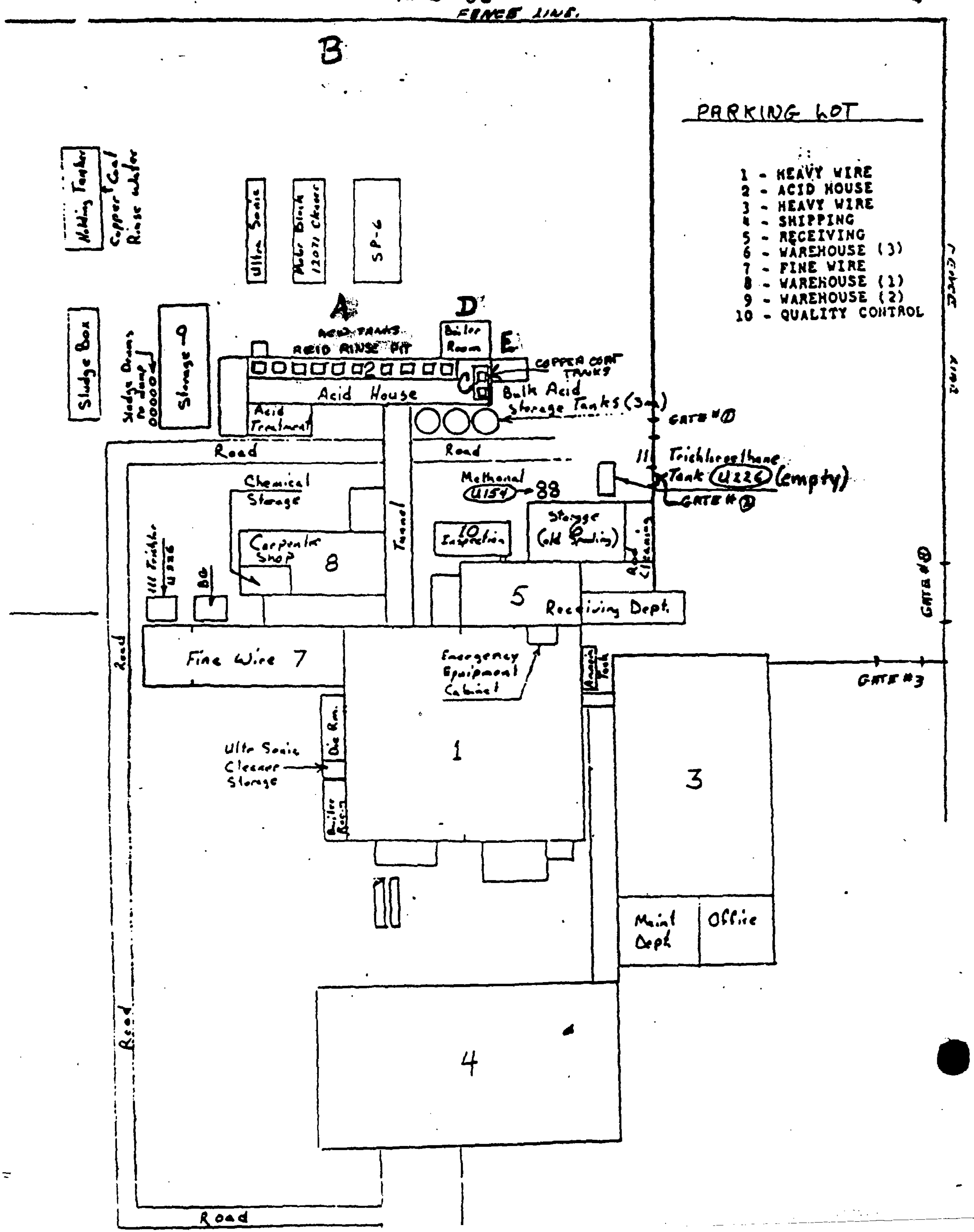
(b) The material was extremely dilute acid wash water (spent pickle liquor) and treated, neutralized pickle liquor.

(c) The quantity of the leak was not measured, but is believed to be small given the size of the cracks discovered.

(d) By digging the dirt away from the outside wall, Techalloy discovered one pinhole-type crack and another larger crack about 36 inches long. These were repaired with cement and epoxy.

Up-dated Storage Plan

12-3-85



APPENDIX B

Techalloy Part A Permit Application

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-S80004

FORM 3 RCRA

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER

F | I L D 0 0 5 1 7 8 9 7 5

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in Item I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

☐ 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

☐ 2. NEW FACILITY *(Complete item below.)*

C 8 | YR. | MO. | DAY | FOR EXISTING FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

YR. | MO. | DAY | FOR NEW FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR IS EXPECTED TO BEGIN

B. REVISED APPLICATION *(place an "X" below and complete Item I above)*

☒ 1. FACILITY HAS INTERIM STATUS

☐ 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES – CODES AND DESIGN CAPACITIES

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

B. PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.
1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	Q
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C | DUP | T/A C | 1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S 0 2	600	G		5				
X-2	T 0 3	20	E		6				
1	T 0 1	2000	G		7				
2	T 0 4	3000	G		8				
3					9				
4					10				

Continued from the front.

III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

N/A

IV. DESCRIPTION OF HAZARDOUS WASTES

A. EPA HAZARDOUS WASTE NUMBER — Enter the four–digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four–digit number*(s)* from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. ESTIMATED ANNUAL QUANTITY — For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non—listed waste*(s)* that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE — For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed hazardous waste: For each listed hazardous waste entered in column A select the code*(s)* from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non—listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code*(s)* from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non—listed hazardous wastes that possess that characteristic or toxic contaminant.

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code*(s)*.

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER — Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* — A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non—listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)				D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
X-1	K054	900	P	T03	D80			
X-2	D002	400	P	T03	D80			
X-3	D001	100	P	T03	D80			

Continued from page 2.
NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1): W I L D 0 0 5 1 7 8 9 7 5 | T/A C: 1

FOR OFFICIAL USE ONLY: W DUP | 2 DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)				D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
1	D002	4000	P	T01				
2	D003	4000	P	T04				
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

EPA I.D. NO. (enter from page 1)

I L D 0 0 5 1 7 8 9 7 5 | T/A | C 6

V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility *(see instructions for more detail).*

VI. PHOTOGRAPHS

All existing facilities must include photographs *(aerial or ground-level)* that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas *(see instructions for more detail).*

VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE (degrees, minutes, & seconds)	LONGITUDE (degrees, minutes, & seconds)

VIII. FACILITY OWNER

☐ A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. (area code & no.)
TECHALLOY ILLINOIS INC.	815-923-2131

3. STREET OR P.O. BOX		4. CITY OR TOWN	5. ST.	6. ZIP CODE
P.O. BOX 423	G	UNION	IL	60180

IX. OWNER CERTIFICATION

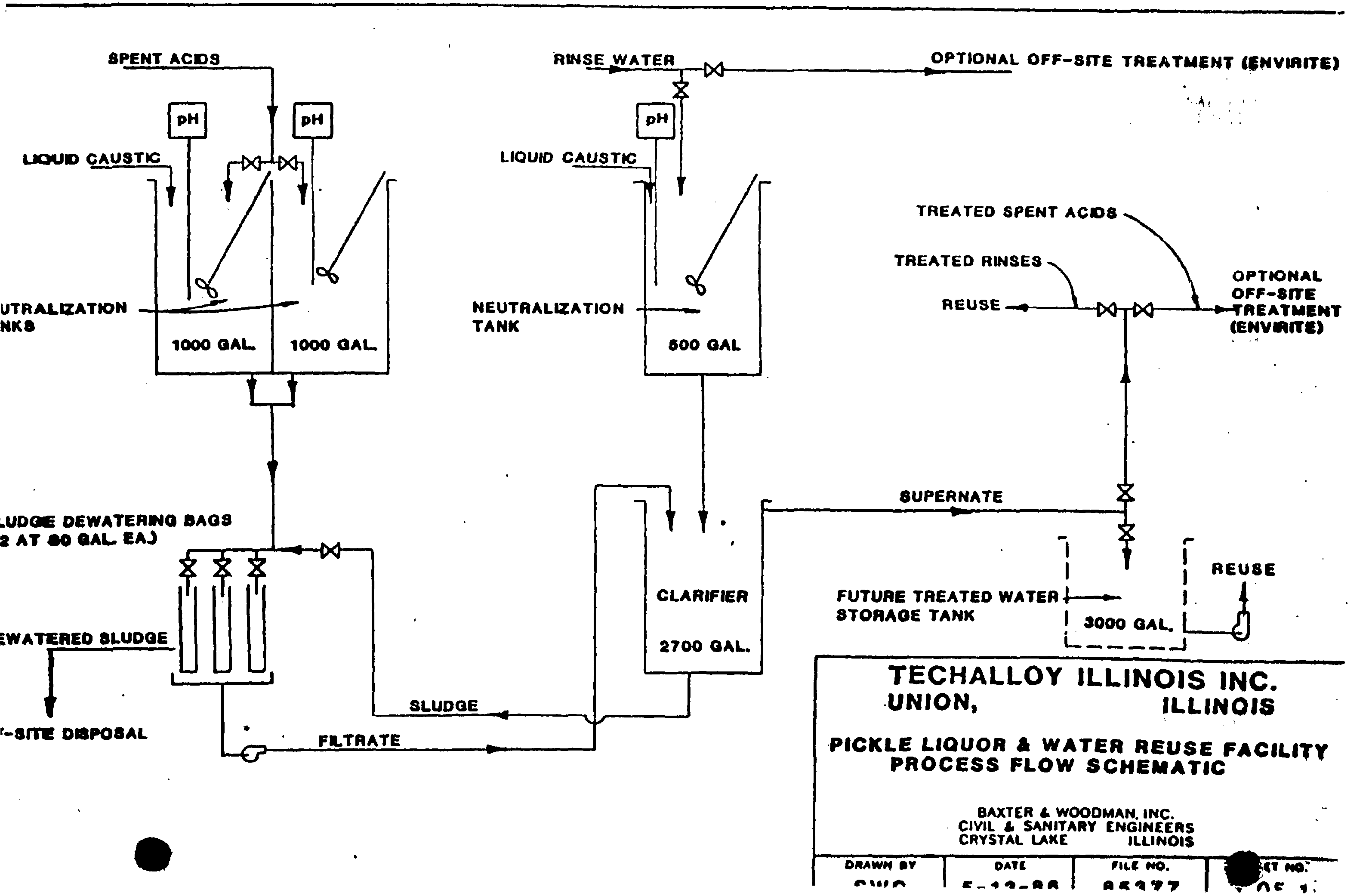
I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

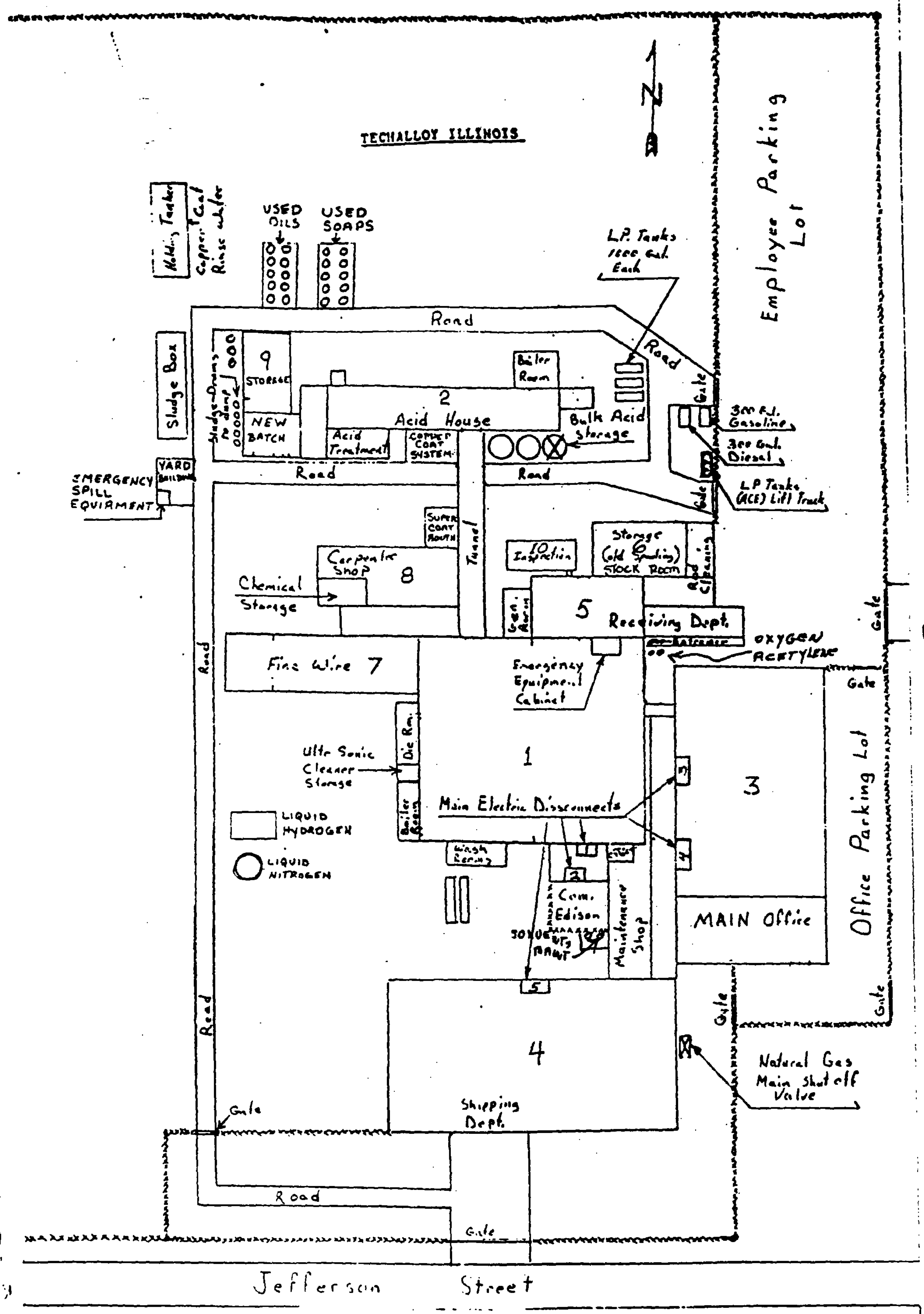
A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
GEORGE R. MILLER	George R. Miller	1/18/88

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME (print or type)	B. SIGNATURE	C. DATE SIGNED
GEORGE R. MILLER		


SPENT ACIDS
pH
pH
LIQUID CAUSTIC
UTRALIZATION
NKS
1000 GAL.
1000 GAL.
RINSE WATER
OPTIONAL OFF-SITE TREATMENT (ENVIRITE)
pH
LIQUID CAUSTIC
NEUTRALIZATION
TANK
500 GAL
TREATED SPENT ACIDS
TREATED RINSES
REUSE
OPTIONAL
OFF-SITE
TREATMENT
(ENVIRITE)
LUDGE DEWATERING BAGS
2 AT 80 GAL. EA.)
EWATERED SLUDGE
-SITE DISPOSAL
SUPERNATE
CLARIFIER
2700 GAL.
FUTURE TREATED WATER
STORAGE TANK
3000 GAL.
REUSE
SLUDGE
FILTRATE
TECHALLOY ILLINOIS INC.
UNION, ILLINOIS
PICKLE LIQUOR & WATER REUSE FACILITY
PROCESS FLOW SCHEMATIC
BAXTER & WOODMAN, INC.
CIVIL & SANITARY ENGINEERS
CRYSTAL LAKE ILLINOIS
DRAWN BY
DATE
FILE NO.



TECHALLOY ILLINOIS
N
Holding Tanker
Copper Coat Rinse water
USED OILS
USED SOAPS
L.P. Tanks 1000 Gal. Each
Employee Parking Lot
Road
Sludge Box
Sludge-Drums to dump
9 STORAGE
NEW BATCH
2 Acid House
Acid Treatment
COPPER COAT SYSTEM
Boiler Room
Bulk Acid Storage
Gate
300 Gal. Gasoline
300 Gal. Diesel
LP Tanks (ACE) Lift Truck
YARD BUILDING
EMERGENCY SPILL EQUIPMENT
SUPER COAT BOOTH
Tunnel
Carpenter Shop 8
Chemical Storage
10 Inspection
Storage 6 (old Spooling) STOCK ROOM
Gen. Room
5
Receiving Dept.
OXYGEN ACETYLENE
Road
Fine Wire 7
Emergency Equipment Cabinet
Die Rm.
Ultr Sonic Cleaner Storage
1
Main Electric Disconnects
Boiler Room
LIQUID HYDROGEN
LIQUID NITROGEN
Wash Room
Com. Edison
50 KVA
Maintenance Shop
3
MAIN Office
Office Parking Lot
Olson Road
4
Shipping Dept.
Natural Gas Main Shut off Valve
Road
Jefferson Street

APPENDIX C

Laboratory Analytical Data for Techalloy Wastes

D002

CHEM-CLEAR®

Form No LAS 11 87

11800 S. Stony Island Avenue
Chicago, Illinois 60617
(312) 646-6202

CHI # 4803 SMALL ACID PIT

PERMIT # 000052

California List x

HAZARD CODE D002

D007 ← what about this?

WASTE SOURCE	
WASTE GENERATOR	Tech Alloy
WASTE DESCRIPTION	Nitric Acid and Rinse Water
RECEIPT DATE	12-21-87
VOLUME	40,000

WASTE CHARACTERISTICS

COLOR/APPEARANCE	Dk Green Clear	WATER MISCIBILITY	+
FLOATER	-	% OIL ON ACIDIFICATION	-
FREE OIL	-		

TEST	As Rec.	LEACH.	TEST	As Rec.	LEACH.
pH	1.1		Ag, ppm	0.3	
% TOTAL SOLIDS	4.96		As, ppm	<0.1	
% DISSOLVED SOLIDS			Ba, ppm	0.2	
% SUSPENDED SOLIDS	0.02		Cd, ppm	0.1	
% SETTLEABLE SOLIDS			Cr, ppm	2700.	
FLASH POINT °F			Cr (Hex), ppm	ND	
OIL AND GREASE, ppm	<1.0		Cu, ppm	0.9	
PHENOLS, ppm	<1.0		Hg, ppb	<4.0	
CHLORIDE, ppm			Ni, ppm	4600.	
BROMIDE, ppm			Pb, ppm	2.87	
PHOSPHATE, ppm (TOTAL)			Se, ppm	<0.1	
COD, ppm	4000.		Zn, ppm	9.6	
BOD, ppm			Fe, ppm	5000.	
ACIDITY mg/1 as $CaCo_3$					
ALKALINITY, mg/1 as $CaCo_3$					
CYANIDE, ppm (TOTAL)	<1.0		TOX, ppm		
CYANIDE, ppm (RELEASE)			HOC, ppm		
SULFIDE, ppm (TOTAL)			TOV, ppm		
SULFIDE, ppm (RELEASE)	<10				

COMMENTS THIS REPORT HAS BEEN PREPARED FOR THE EXCLUSIVE USE AND BENEFIT OF CHEM-CLEAR, INC. NO REPRESENTATION CONCERNING SAMPLE VALIDITY OR ANALYTICAL COMPLETENESS IS HEREBY MADE TO ANY OTHER PERSON RECEIVING THIS REPORT.

CHEM-CLEAR®

11800 S. Stony Island Avenue
Chicago, Illinois 60617
(312) 646-6202

Form No LAS 11 96

CHI#4021 BIG ACID PIT

WASTE SOURCE			
WASTE GENERATOR	Tech Alloy		
WASTE DESCRIPTION	lined pit		
RECEIPT DATE	5-14-87	VOLUME	350,000 gal

WASTE CHARACTERISTICS

COLOR/APPEARANCE	Light Green Clear	WATER MISCIBILITY	+
FLOATER	-	% OIL ON ACIDIFICATION	-
% FREE OIL	-		

TEST	As Rec.	LEACH.	TEST	As Rec.	LEACH.
PM ← pH	1.0		Ag, ppm	0.5	
% TOTAL SOLIDS	1.47		As, ppm	<0.1	
% DISSOLVED SOLIDS			Ba, ppm	0.5	
% SUSPENDED SOLIDS	<0.1%		Cd, ppm	<0.1	
% SETTLEABLE SOLIDS			Cr, ppm	440.0	
FLASH POINT °C			Cr (Hex), ppm		
OIL AND GREASE, ppm	<1.0		Cu, ppm	50.0	
PHENOLS, ppm	<1.0		Hg, ppb	<4.0	
CHLORIDE, ppm			Ni, ppm	800.0	
BROMIDE, ppm			Pb, ppm	0.33	
PHOSPHATE, ppm (TOTAL)			So, ppm	<0.1	
COD, ppm	4000.0		Zn, ppm	5.0	
BOD, ppm			Fe, ppm	1520.0	
ACIDITY mg/1 as $CaCo_3$			B, ppm		
ALKALINITY, mg/1 as $CaCo_3$					
CYANIDE, ppm (TOTAL)	<1.0				
CYANIDE, ppm (RELEASE)					
SULFIDE, ppm (TOTAL)	<1.0				
SULFIDE, ppm					

COMMENTS THIS REPORT HAS BEEN PREPARED FOR THE EXCLUSIVE USE AND BENEFIT OF CHEM-CLEAR, INC. NO REPRESENTATION CONCERNING SAMPLE VALIDITY OR ANALYTICAL COMPLETENESS IS HEREBY MADE TO ANY OTHER PERSON RECEIVING THIS REPORT.

aqualab inc.
?50 West Bartlett Rd.
?rtlett IL 60103
?-289-3100

ANALYTICAL REPORT

Mr. Tom Tutein
BAXTER & WOODMAN INC.
8678 Ridgefield
Crystal Lake IL 60188

13 June 1986
Sample No. 23011
WWT SLUDGE
FROM HOPPER

SAMPLE RECEIVED: 05-13-86
SAMPLE DESCRIPTION: Project #85377; Waste Water Treatemnt System
Sludge from Techalloy Illinois Inc., Union IL

VOLATILE COMPOUNDS

ppm ppm

ug/g	Compound	ug/g	Compound
<3	Acrolein (2V)	<0.3	1,2-Trans-Dichloroethylene (30V)
<3	Acrylonitrile (3V)	<0.3	1,2-Dichloropropane (32V)
<0.3	Benzene (4V)	<0.3	1,3-Dichloropropylene (33V)
<0.3	Carbon Tetrachloride (6V)	<0.3	Ethylbenzene (38V)
<0.3	Chlorobenzene (7V)	<0.3	Methylene Chloride (44V)
<0.3	1,2-Dichloroethane (10V)	<6	Methyl Chloride (45V)
<0.3	1,1,1-Trichloroethane (11V)	<6	Methyl Bromide (46V)
<0.3	1,1-Dichloroethane (13V)	<0.3	Bromoform (47V)
<0.3	1,1,2-Trichloroethane (14V)	<0.3	Dichlorobromomethane (48V)
<0.3	1,1,2,2-Tetrachloroethane (15V)	<0.3	Chlorodibromomethane (51V)
<6	Chloroethane (16V)	<0.3	Tetrachloroethylene (85V)
<0.3	2-Chloroethylvinyl Ether (19V)	<0.3	Toluene (86V)
<0.3	Chloroform (23V)	<0.3	Trichloroethylene (87V)
<0.3	1,1-Dichloroethylene (29V)	<6	Vinyl Chloride (88V)
<0.3	1,2-Cis Dichloroethylene	<0.3	Xylenes, total
<0.3	1,2 Dichlorobenzene	<0.3	1,3 Dichlorobenzene
<0.3	1,4 Dichlorobenzene		

aqualab inc.
850 West Bartlett Rd.
-artlett IL 60103
.2-289-3100

ANALYTICAL REPORT

Mr. Tom Tutein
BAXTER & WOODMAN INC.
8678 Ridgefield
Crystal Lake IL 60118

13 June 1986
Sample No. 23011

SAMPLE RECEIVED: 05-13-86
SAMPLE DESCRIPTION: Project #85377; Waste Water Treatment System Sludge from Techalloy Illinois Inc., Union IL

BASE/NEUTRAL COMPOUNDS

ug/g	Compound	ug/g	Compound
<10	Acenaphthene (1B)	<10	Nitrobenzene (56B)
<50	Benzidine (5B)	<10	N-Nitrosodimethylamine (61B)
<10	1,2,4-Trichlorobenzene (8B)	<10	N-Nitrosodiphenylamine (62B)
<10	Hexachlorobenzene (9B)	<10	N-Nitrosodi-n-propylamine (63B)
<10	Hexachloroethane (12B)	<10	Bis(2-Ethylhexyl)Phthalate (66B)
<10	Bis(2-chloroethyl)Ether (18B)	<10	Butyl Benzyl Phthalate (67B)
0	2-Chloronaphthalene (20B)	<10	Di-N-Butyl Phthalate (68B)
<10	1,2-Dichlorobenzene (25B)	<10	Di-N-Octyl Phthalate (69B)
<10	1,3-Dichlorobenzene (26B)	<10	Diethyl Phthalate (70B)
<10	1,4-Dichlorobenzene (27B)	<10	Dimethyl Phthalate (71B)
<25	3,3'-Dichlorobenzidine (28B)	<10	Benzo(a)Anthracene (72B)
<10	2,4-Dinitrotoluene (35B)	<10	Benzo(a)Pyrene (73B)
<10	2,6-Dinitrotoluene (36B)	<10	Benzo(b)Fluoranthene (74B)
<10	1,2-Diphenylhydrazine (37B)	<10	Benzo(k)Fluoranthene (75B)
<10	Fluoranthene (39B)	<10	Chrysene (76B)
<10	4-Chlorophenyl Phenyl Ether (40)	<10	Acenaphthylene (77B)
<10	4-Bromophenyl Phenyl Ether (41B)	<10	Anthracene (78B)
<10	Bis(2-Chloroisopropyl)Ether (42)	<10	Benzo(ghi)Perylene (79B)
<10	Bis(2-Chloroethoxy)Methane (43B)	<10	Fluorene (80B)
<10	Hexachlorobutadiene (52B)	<10	Phenanthrene (81B)
<25	Hexachlorocyclopentadiene (53B)	<10	Dibenzo(a,h)Anthracene (82B)
<10	Isophorone (54B)	<10	Ideno(1,2,3-cd)Pyrene (83B)
<10	Naphthalene (55B)	<10	Pyrene (84B)

ACID COMPOUNDS

<10	2,4,6-Trichlorophenol (21A)	<10	4-Nitrophenol (58A)
<10	4-Chloro-3-Methylphenol (22A)	<25	2,4-Dinitrophenol (59A)
<10	2-Chlorophenol (24A)	<25	2-Methyl-4,6-dinitrophenol (60A)
<10	2,4-Dichlorophenol (31A)	<10	Pentachlorophenol (64A)
<10	2,4-Dimethylphenol (34A)	<10	Phenol (65A)
( )	2-Nitrophenol (57A)		

DIOXIN

ND* 2,3,7,8-Tetrachlorodibenzo-p-dioxin

qualab Inc.
0 West Bartlett Rd.
rtlett IL 60103
12-289-3100

ANALYTICAL REPORT

Mr. Tom Tutein
BAXTER & WOODMAN INC.
8678 Ridgefield
Crystal Lake IL 60118

13 June 1986
Sample No. 23011

SAMPLE DESCRIPTION: Project #85377; Waste Water Treatment System Sludge from Techalloy Illinois Inc., Union IL

Date Received: 05-13-86

E.P.Toxicity per RCRA:

Arsenic	<0.01	mg/L
Barium	<0.01	mg/L
Cadmium	<0.001	mg/L
Chromium	1.76	mg/L
Lead	<0.01	mg/L
Mercury	<0.001	mg/L
Selenium	<0.01	mg/L
Silver	0.008	mg/L

William H. Mottashed
William H. Mottashed

aqualab inc.
850 West Bartlett Rd.
Bartlett IL 60103
12-289-3100

RECEIVED
JUN 17 1986
BAXTER & WOODMAN

F006

ANALYTICAL REPORT

Mr. Tom Tutein
BAXTER & WOODMAN INC.
8678 Ridgefield
Crystal Lake IL 60118

13 June 1986
Sample No. 23011

SAMPLE DESCRIPTION: Project #85377; Waste Water Treatment System Sludge from Techalloy Illinois Inc., Union IL

Date Received: 05-13-86

Results on a dry weight basis:

Acidity ($CaCO_3$)	90,000.	ug/g	Solids, tot.	50.54	%
Alkalinity ($CaCO_3$)	60,000.	ug/g	Solids, tot. vol.	10.40	%
Chromium, hex.	141.	ug/g	TOC	0.6	%
COD	3700.	ug/g	Aluminum	667.	ug/g
ductivity	47,000.	umhos	Arsenic	<0.05	ug/g
Cyanide	0.35	ug/g	Barium	<5.	ug/g
Reactive cyanide	<0.35	ug/g	Cadmium	0.81	ug/g
Nitrogen, ammonia	53.9	ug/g	Chromium	14,400.	ug/g
Nitrogen, tot Kjel	1530.	ug/g	Cobalt	548.	ug/g
pH	6.70	units	Copper	4550.	ug/g
Phenols	<0.1	ug/g	Iron	7240.	ug/g
Phosphorus	11.	ug/g	Lead	126.	ug/g
ulfide	<10.	ug/g	Mercury	<0.01	ug/g
Sulfide, reactive	<10.	ug/g	Nickel	31,000.	ug/g
ulfur	Did not ignite		Potassium	91,000.	ug/g
OD_5	2200.	mg/L	Selenium	<0.05	ug/g
nsity	1.18	g/cc	Sodium	12,200.	ug/g
sh Point-no flash at 212.		^{o}F	Zinc	29.3	ug/g
il & Grease	454.	ug/g	Vanadium	143.	ug/g

aqualab inc.
3548 35th St.
Rockford IL 61109
15-874-2171

ANALYTICAL REPORT

Mr. Gerhard Nausner
MET-CHEM CONSULTANTS
1319 Cunningham Street
Rockford, Il. 61102

17 April 1985
Sample No. 33977

Sample Description: P.O.5147-T WASTE WATER TREATMENT SLUDGE

Date Taken:

Date Received: 3/28/85 1315

Corrosivity			
	pH	5.85	units
Ignitability			
	Flash Point	No Flash	@212 F
Reactivity and Totals			
	Total Cyanide	0.004	ppm
	Reactive Cyanide	<0.025	ppm
	Total Sulfide	0.06	ppm
	Reactive Sulfide	<0.25	ppm
E.P. Toxicity			
	Arsenic	<0.01	ppm
	Barium	22.0	ppm
	Cadmium	0.055	ppm
Run Test Hex chrom.	Chromium	40.4	ppm
	Lead	<0.01	ppm
	Mercury	<0.001	ppm
	Selenium	<0.05	ppm
	Silver	0.015	ppm
Other Characteristics			
	Density	96.04	lbs/ft3
	Phenol	0.598	ppm
	Solids,total	59.92	%
	Alkalinity	0.5	%

William H. Mottashed
William H. Mottashed
Division Manager

aqualab inc.
3548 35th street
ockford, illinois 61109
815/874-2171

21 September 1984

analytical report sample no. 31472

Mr. Jerry Nausner
MET-CHEM CONSULTANTS
1319 Cunningham Street
Rockford, Il. 61102

SAMPLE DESCRIPTION: Techalloy-sludge sample for waste hauling
P.O. 5057

date taken: date received: 9/5/84

Corrosivity			
	pH	6.83	units
Ignitability			
	Flash Point	No Flash	
Reactivity and Totals			
	Total Cyanide	8.77	ppm
	Reactive Cyanide	0.834	ppm
	Total Sulfide	<0.25	ppm
	Reactive Sulfide	<0.25	ppm
E.P. Toxicity			
	Arsenic	<0.001	ppm
	Barium	0.03	ppm
	Cadmium	0.036	ppm
	Chromium	6.38	ppm
	Lead	0.11	ppm
	Mercury	0.001	ppm
	Selenium	<0.001	ppm
	Silver	0.012	ppm
Other Characteristics			
	Density	104.	lbs/ft^3
	Phenol	<0.025	ppm
	Solids,total	60.1	%
	Alkalinity	0.4	%

Larry McAnarney

Larry McAnarney
Division Manager

aqualab inc.
548 35th street
ockford, illinois 61109
.5/874-2171

7 June 1983

analytical report — sample no. 25903

Mr. Gerry Nausner
MET CHEM CONSULTANTS
1319 Cunningham Street
Rockford, Illinois 61102

COPY

Sample Description: Techalloy Sludge TREATMENT SYSTEM

date taken: — date received: 5/1/83 1700

Corrosivity			
	pH	9.76	units
Ignitability			
	Flash Point	No Flash	
Reactivity and Totals			
	Reactive Sulfide	<0.25	ppm
	Reactive Cyanide	0.038	ppm
	Total Sulfide	0.12	ppm
	Total Cyanide	2.21	ppm
E.P. Toxicity			
	Arsenic	<0.001	ppm
	Barium	<0.01	ppm
	Cadmium	0.019	ppm
	Chromium	0.891	ppm
	Lead	0.06	ppm
	Mercury	0.021	ppm
	Selenium	<0.001	ppm
	Silver	0.010	ppm
Other Characteristics			
	Density	96.	lbs/ft^3
	Phenol	<0.25	ppm
	Solids, total	60.6	%
	Alkalinity	0.3	%
	Gas Evolution	pH <1 slight reaction pH 12 No Reaction	

Larry McAnarney
Division Manager
Larry McAnarney

aqualab inc.
3548 35th street
rockford, illinois 61109
815/874-2171

22 April 1982

analytical report

sample no. 19012

Mr. George Miller
TECHALLOY
Olson Road
Union, Illinois 61080

Addendum

SAMPLE DESCRIPTION: SLUDGE

date taken: 7/8/82 date received: 7/10/82 1500

EP Toxicity Hexavalent Chromium 0.59 mg/L

T.A. Reid

T.A. Reid

aqualab inc.
3548 35th street
[illegible]kford, illinois 61109
815/874-2171

14 May 1982

analytical report

sample no. 22779

WWT SLUDGE

MET CHEM CONSULTANTS
1319 Cunningham Street
Rockford, Illinois 61102

Techalloy P.O. #U-26220

SAMPLE DESCRIPTION: RCRA Sample TECHALLOY ILLINOIS, INC.

date taken: date received: 4/27/82 1230

Corrosivity			
	pH	6.88	units
Ignitability			
	Flash Point	No Flash 212°F	
Reactivity and Totals			
	Reactive Sulfide	<0.25	mg/L
	Reactive Cyanide	<0.25	mg/L
	Total Sulfide	<0.25	mg/L
	Total Cyanide	1.56	mg/L
E.P. Toxicity			
	Arsenic	<0.001	mg/L
	Barium	0.40	mg/L
	Cadmium	0.024	mg/L
	Chromium hex	<0.01	mg/L
	Lead	0.12	mg/L
	Mercury	0.004	mg/L
	Selenium	0.001	mg/L
	Silver	0.014	mg/L
Other Characterics			
	Density	--	lbs/ft^3
	Phenol	<0.025	mg/L
	Solids tot	57.6%	

T.A. Reid

aqualab inc.
3548 35th street
rockford, illinois 61109
315/874-2171

30 July 1981

analytical report analysis no.: 19012

WWT SLUDGE
FROM HOPPER

MET CHEM CONSULTANTS
1319 Cunningham Street
Rockford, Illinois 61102

SAMPLE DESCRIPTION: Tech alloy sludge

date taken:	date received:	date analyzed:
7/8/81	7/10/81 1500	7/10/81

	IEPA - Total ppm	RCRA mg/L
Arsenic	0.60	<0.001
Ash	41.3%	
Barium	5.6	0.09
Cadmium	0.39	0.008
Chromium, tot.	1900.	10.7
Copper	1100.	7.80
Cyanide, soluble	0.071	
*Flash Point	No Flash No Boil	
Lead	7.1	0.09
Mercury	0.06	<0.01
Nickel	15000.	420.
*pH	9.93 units	
Phenol	<0.025	
Selenium	<0.01	<0.01
Silver	0.45	<0.001
*Solids, tot.	44.7%	
Sulfide, soluble	<1	
Zinc	59.	
Density	92 lbs/ft^3	

*Applies to both IEPA & RCRA

ab inc.
35th street
kford, illinois 611
5/874-2171

alytical report

29 August 1980

analysis no. 13974

MET CHEM CONSULTANTS, INC.
1319 Cunningham Street
Rockford, Illinois 61102

Attention: Mr. G. [illegible]

date taken	date received.		anal...
8/7/80	8/8/80	1200	1415

SAMPLE DESCRIPTION: Sludge #806

Parameter	Analysis, ppm	Leach, ppm*
Arsenic	0.90	
Cadmium	0.03	
Chromium, total	9300	159
Copper	411	82
Cyanide, total	15.3	
Lead	81	
Mercury	0.14	
Nickel	440	100
Zinc	58	
pH	8.00	
%Total Solids	34.2%	
Flash Point	$103^{o}F$ - Boil Point * SEE NOTE	

NOTE: THE FLASH POINT WAS CHECKED BY THE COC METHOD ASTM D 92 WHICH IS NOT APPLICABLE TO THESE TYPE OF SLUDGES. THE "BOIL POINT" WAS DETERMINED TO BE THAT TEMPERATURE AT WHICH THE SAMPLE BEGAN TO SPATTER IN THE CUP WHICH IS ACTUALLY MEANINGLESS CONSIDERING THE POOR HEAT TRANSFER OF THIS METHOD WHEN WORKING WITH SLUDGES

Larry McAnarney

Larry McAnarney,
Laboratory Supervisor

*Results reported on Dry Weight Basis.

CHEM-CLEAR®

11800 S. Stony Island Avenue
Chicago, Illinois 60617
(312) 646-6202

Form No. [illegible]

CHI#4574
PERMIT#000052
D002

PIT CLEANING SLUDGE

WASTE SOURCE			
WASTE GENERATOR	Tech Alloy		
WASTE DESCRIPTION	Sludge		
RECEIPT DATE	10-1-87	VOLUME	40 drums

WASTE CHARACTERISTICS

COLOR/APPEARANCE	Dk Thick Brown	WATER MISCIBILITY	+
% FLOATER	-	% OIL ON ACIDIFICATION	-
% FREE OIL	-		

TEST pH	As Rec.	LEACH.	TEST	As Rec.	LEACH.
PH	10.4		Ag, ppm	0.1	
% TOTAL SOLIDS	44.24		As, ppm	<0.1	
% DISSOLVED SOLIDS			Ba, ppm	2.7	
% SUSPENDED SOLIDS			Cd, ppm	0.1	
% SETTLEABLE SOLIDS			Cr, ppm	4.7	
FLASH POINT °C			Cr (Hex), ppm	ND	
OIL AND GREASE, ppm	1525		Cu, ppm	40.	
PHENOLS, ppm	<1.0		Hg, ppb	<4.0	
CHLORIDE, ppm			Ni, ppm	1600.	
BROMIDE, ppm			Pb, ppm	0.51	
PHOSPHATE, ppm (TOTAL)			So, ppm	<0.1	
COD, ppm	2400		Zn, ppm	8.0	
BOD, ppm			Fe, ppm	40.0	
ACIDITY mg/1 as $CaCo_3$			B, ppm		
ALKALINITY, mg/1 as $CaCo_3$					
CYANIDE, ppm (TOTAL)	<1.0				
CYANIDE, ppm (RELEASE)					
SULFIDE, ppm (TOTAL)					
SULFIDE, ppm REL	>10				

COMMENTS THIS REPORT HAS BEEN PREPARED FOR THE EXCLUSIVE USE AND BENEFIT OF CHEM-CLEAR, INC. NO REPRESENTATION CONCERNING SAMPLE VALIDITY OR ANALYTICAL COMPLETENESS IS HEREBY MADE TO ANY OTHER PERSON RECEIVING THIS REPORT.

aqualab inc.
850 West Bartlett Rd.
Bartlett IL 60103
-289-3100

ANALYTICAL REPORT

Mr. Tom Tutein
BAXTER & WOODMAN INC.
8678 Ridgefield
Crystal Lake IL 60118

13 June 1986
Sample No. 23010
HIGH ACID – PROCESS WASTE

SAMPLE DESCRIPTION: Project #85337; Sludge the ~~ABS~~ ABF Pickel Bath at Techalloy Illinois Inc., Union IL

Date Received: 05-13-86

cidcity ($CaCO_3$)	390,000.	ug/g	**E.P. Toxicity per RCRA:**		
lkalinity ($CaCO_3$)	<1.	ug/g	Arsenic	<0.01	mg/L
y...ide	0.44	ug/g	Barium	<0.01	mg/L
eactive Cyanide	<0.5	ug/g	Cadmium	0.029	mg/L
H	2.56	units	Chromium	212.	mg/L
henols	<0.1	ug/g	Lead	0.20	mg/L
ulfide	<0.1	ug/g	Mercury	<0.001	mg/L
eactive Sulfide	<0.1	ug/g	Selenium	<0.01	mg/L
eactivity Air/Water	No Reaction		Silver	0.045	mg/L
ompatibility/Acid	No Reaction				
ompatibility/Base	Turned Dark Brown				
sh	41.55	%			
ensity	1.88	g/cc			
Point-no flash at 212.		°F			
s, total	61.59	%			

William H. Mottashed
William H. Mottashed

A003

6/25/86

W3058A

OLD CYANIDE - PIT BOTTOM

Tech Alloy

Waste description: Rinse CN

Volume: 1400 gallons bulk

Laboratory Analysis: ph 7.65 sp.gr= 1.034 g/ml NH_3 ND

CN distillation 208 ppm
Pale green liquid

Inorganic Metals (ppm): Cadmium < 100 chromium ND Copper 330
Iron < 100 lead < 100 nickel 1160
Zinc < 100

W3058B

Waste description: CU CN

Volume: 700 gallons bulk

Laboratory Analysis: ph 9.95 sp.gr= 1.100 g/ml NH_3 ND

CN Distillation 37,500
cloudy liquid

Inorganic Metals (ppm) : Cadmium<100 chromium ND Copper 26,300
Iron 420 lead < 100 Nickel 1110
Zinc <100

This is not a certified laboratory.

CONFINED SPACE ENTRY PROCEDURES

A confined space provides the potential for unusually high concentrations of contaminants, explosive atmospheres, limited visibility, and restricted movement. This section will establish requirements for safe entry into, continued work in, and safe exit from confined spaces. Additional information regarding confined space entry can be found in 29 CFR 1926.21, 29 CFR 1910 and NIOSH 80-106.

Definitions

Confined Space: A space or work area not designed or intended for normal human occupancy, having limited means of egress and poor natural ventilation; and/or any structure, including buildings or rooms, which have limited means of egress.

Confined Space Entry Permit (CSEP): A document to be initiated by the supervisor of personnel who are to enter into or work in a confined space. The Confined Space Entry Permit (CSEP) will be completed by the personnel involved in the entry and approved by the HSO before personnel will be permitted to enter the confined space. The CSEP shall be valid only for the performance of the work identified and for the location and time specified. The beginning of a new shift with change of personnel will require the issuance of a new CSEP. A copy of the CSEP is attached for reference purposes.

Confined Space Observer: An individual assigned to monitor the activities of personnel working within a confined space. The confined space observer monitors and provides external assistance to those inside the confined space. The confined space observer summons rescue personnel in the event of emergency and assists the rescue team.

General Provisions

- When possible, confined spaces should be identified with a posted sign which reads: *Caution - Confined Space.*

- Only personnel trained and knowledgeable of the requirements of these Confined Space Entry Procedures will be authorized to enter a confined space or be a confined space observer.

- A Confined Space Entry Permit (CSEP) must be issued prior to the performance of any work within a confined space. The CSEP will become a part of the permanent and official record of the site.

- Natural ventilation shall be provided for the confined space prior to initial entry and for the duration of the CSEP. Positive/forced mechanical ventilation may be required. However, care should be taken to not spread contamination outside of the enclosed area.

- If flammable liquids may be contained within the confined space, explosion proof equipment will be used. All equipment shall be positively grounded.

- The contents of any confined space shall, where necessary, be removed prior to entry. All sources of ignition must be removed prior to entry.

- Hand tools used in confined spaces shall be in good repair, explosion proof and spark proof, and selected according to intended use. Where possible, pneumatic power tools are to be used.

- Hand-held lights and other illumination utilized in confined spaces shall be equipped with guards to prevent contact with the bulb and must be explosion proof.

- Compressed gas cylinders, except cylinders used for self-contained breathing apparatus, shall not be taken into confined spaces. Gas hoses shall be removed from the space and the supply turned off at the cylinder valve when personnel exit from the confined space.

- If a confined space requires respiratory equipment or where rescue may be difficult, safety belts, body harnesses, and lifelines will be used. The outside observer shall be provided with the same equipment as those working within the confined space.

- A ladder is required in all confined spaces deeper than the employee's shoulders. The ladder shall be secured and not removed until all employees have exited the space.

- Only self-contained breathing apparatus or NIOSH approved airline respirators equipped with a 5-minute emergency air supply (egress bottle) shall be used in untested confined spaces or in any confined space with conditions determined immediately dangerous to life and health.

- Where air-moving equipment is used to provide ventilation, chemicals shall be removed from the vicinity to prevent introduction into the confined space.

- Vehicles shall not be left running near confined space work or near air-moving equipment being used for confined space ventilation.

- Smoking in confined spaces will be prohibited at all times.

- Any deviation from these Confined Space Entry Procedures requires the prior permission of the On-Scene Coordinator.

Procedure for Confined Space Entry

The HSO and Entry Team shall:

- Evaluate the job to be done and identify the potential hazards before a job in a confined space is scheduled.

- Ensure that all process piping, mechanical and electrical equipment, etc., have been disconnected, purged, blanked-off or locked and tagged as necessary.

- If possible, ensure removal of any standing fluids that may produce toxic or air displacing gases, vapors, or dust.

- Initiate a Confined Space Entry Permit (CSEP) in concurrence with the On-Scene Coordinator.

- Ensure that any hot work (welding, burning, open flames, or spark producing operation) that is to be performed in the confined space has been approved by the On-Scene Coordinator and is indicated on the CSEP.

- Ensure that the space is ventilated before starting work in the confined space and for the duration of the time that the work is to be performed in the space.

- Ensure that the personnel who enter the confined space and the confined observer helper are familiar with the contents and requirements of this instruction.

- Ensure remote atmospheric testing of the confined space prior to employee entry and before validation/revalidation of a CSEP to ensure the following:

    1. Oxygen content between 19.5% - 23.0%.
    2. No concentration of combustible gas in the space. Sampling will be done throughout the confined space and specifically at the lowest point in the space.
    3. The absence of other atmospheric contaminants, if the space has contained toxic, corrosive, or irritant material.
    4. If remote testing is not possible, Level B PPE is required as referenced in III 13.

- Designate whether hot or cold work will be allowed. If all tests in a. through c. in IV 8 are satisfactory, complete the CSEP listing any safety precautions, protective equipment, or other requirements.

- Ensure that a copy of the CSEP is posted at the work site, a copy is filed with the project supervisor, and a copy is furnished to the On-Scene Coordinator.

The CSEP shall be considered void if work in the confined space does not start within one hour after the tests in IV 8 are performed or if significant changes within the confined space atmosphere or job scope occurs.

The CSEP posted at the work site shall be removed at the completion of the job or the end of the shift, whichever is first.

Confined Space Observer

- While personnel are inside the confined space, a confined space observer will monitor the activities and provide external assistance to those in the space. The observer will have no other duties which may take his attention away from the work or require him to leave the vicinity of the confined space at any time while personnel are in the space.

- The confined space observer shall maintain at least voice contact with all personnel in the confined space. Visual contact is preferred, if possible.

- The observer shall be instructed by his supervisor in the method for contacting rescue personnel in the event of an emergency.

- If irregularities within the space are detected by the observer, personnel within the space will be ordered to exit.

- In the event of an emergency, the observer must NEVER enter the confined space prior to contacting and receiving assistance from a helper. Prior to this time, he should attempt to remove personnel with the lifeline and to perform all other rescue functions from outside the space.

- A helper shall be designated to provide assistance to the confined space observer in case the observer must enter the confined space to retrieve personnel.

APPENDIX E

Equipment to be Worn for Level B Personnel Protection

LEVEL [illegible] PERSONNEL PROTECTIVE EQUIPMENT:

- Supplied-air respirator (MSHA/NIOSH approved). Respirators may be positive pressure-demand, self-contained breathing apparatus (SCBA), or positive pressure-demand, airline respirator (with escape bottle for IDLH or potential for IDLH atmosphere)
- Chemical-resistant clothing (overalls and long-sleeved jacket; hooded, one or two-piece chemical-splash suit; disposable chemical-resistant, one-piece suits)
- Long cotton underwear
- Coveralls
- Gloves (outer), chemical-resistant
- Gloves (inner), chemical-resistant
- Boots (outer), chemical-resistant, steel toe and shank
- Boot covers (outer), chemical-resistant (disposable)
- Hard hat (face shield)
- 2-way radio communications (intrinsically safe)

Illinois Environmental Protection Agency · P.O. Box 19276, Springfield, IL 62794-9276

217/782-6760

Re: 1110900003-McHenry Co.
Union/Techalloy Company
Superfund/Tech. Repts.

July 10, 1990

Mr. Henry Lopes
Vice President, Tech. Dev.
Techalloy Company, Inc.
84 Business Park Drive
Armonk, New York 10504

Dear Mr. Lopes:

The Agency's Cleanup Objectives Team (COT) and Coordinated Permit Review Committee (CPRC) have set the attached cleanup objectives for the above referenced site. The Class I numbers are off-site objectives and the Class II values are on-site objectives.

If you have any questions, please contact me at the above address and telephone number.

Sincerely,

Henry J. Konzelmann

Henry J. Konzelmann, Project Manager
Immediate Removal Unit
Remedial Project Management Section
Division of Land Pollution Control

HJK:pss

Attachment

cc: Division File
Maywood Region

EXHIBIT NO. 8

PRINTED ON RECYCLED PAPER

Techalloy Cleanup Objectives

Soil

Parameter	Class I Soil (ug/kg)	Class II Soil (ug/kg)	Class I Decision Basis	Class II Decision Basis	ADL[1] (ug/kg)
Methylene Chloride	5.0	25.0	ADL	ADL	5
1,1-Dichloroethylene	7.0	35.0	MCL[2]	(MCL+Treatment)	1.3
1,1-Dichloroethane	ND[7]	ND	---	---	--
1,2-Dichloroethane	5.0	25.0	MCL	(MCL+Treatment)	0.2
1,1,1-Trichloroethane	200.0	1000.0	MCL	(MCL+Treatment)	5.0
Trichloroethylene	5.0	25.0	MCL	(MCL+Treatment)	1.2
1,1,2-Trichloroethane	0.028	0.028	Rfd[3]	Rfd	0.2
MIBK	0.35	0.35	Rfd	Rfd	10.0
Tetrachloroethylene	5.0	25.0	PMCL[4]	(PMCL+Treatment)	0.3
Arsenic	50.0[6]	200.0[6]	MCL	WQC[5] USEPA 1972	10.0[6]
Lead	50.0[6]	100.0[6]	MCL	WQC USEPA 1972	10.0[6]

Vinyl Cl

Groundwater

Parameter	Class I Groundwater (ug/l)	Class II G-Water (ug/l)	Class I Decision Basis	Class II Decision Basis	ADL (ug/kg)
Methylene Chloride	5.0	25.0	ADL	(ADL+Treatment)	5
1,1-Dichloroethylene	7.0	35.0	MCL	(MCL+Treatment)	1.3
1,1-Dichloroethane	ND	ND	---	---	--
1,2-Dichloroethane	5.0	25.0	MCL	(MCL+Treatment)	0.3
1,1,1-Trichloroethane	200.0	1000.0	MCL	(MCL+Treatment)	0.3
Trichloroethylene	5.0	25.0	MCL	(MCL+Treatment)	1.2
1,1,2-Trichloroethane	0.028	0.028	Rfd	Rfd	5.0
MIBK	0.35	0.35	Rfd	Rfd	5.0
Tetrachloroethylene	5.0	25.0	PMCL	(PMCL+Treatment)	0.3
Arsenic	50.0[6]	200.0[6]	MCL	WQC USEPA 1972	10.0[6]
Lead	50.0[6]	100.0[6]	MCL	WQC USEPA 1972	5.0[6]

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1 "ADL" means acceptable detection limit, lowest practical quantitation limit (PQL as defined in SW846
2 "MCL" means maximum contaminant level
3 "Rfd" means reference dose
4 "PMCL" means proposed maximum contaminant level
5 "WQC" means water quality criteria
6 Soil results for inorganics will be based upon EP Toxicity extract
7 "ND" means not determined

Illinois Environmental Protection Agency · P.O. Box 19276, Springfield, IL 62794-9276

Date: October 11, 1990

To: LPC File

From: Virginia Wood

Subject: Tech Alloy/Union
Notice of Closure
#90025/C548

1110900003/McHenry
Tech Alloy/Union
ILD005178975
RCRA Closure

NOTICE OF CLOSURE

Notice of closure of Tech Alloy hazardous waste treatment units located in Union, Illinois first appeared in the Marengo Star on July 25, 1990. The public comment period ended August 24, 1990. No comments were received by this office.

EXHIBIT NO 9

Facility No.: ILD005178975
Public Notice: 90025

Date: July 11, 1990

NOTICE OF CLOSURE
CLOSURE NO. C548

A plan to close Techalloy Company, Inc. hazardous waste treatment units located in Union, Illinois, has been submitted to the Illinois Environmental Protection Agency (IEPA) pursuant to Subpart G of 35 Ill. Adm. Code 725. The facility is a processor of steel and nickel alloy rod. Techalloy Company, Inc. will remain open during and following closure of the hazardous waste treatment units described in this notice.

At this time the IEPA is also requesting that the facility provide information concerning any prior release of hazardous waste constituents from any solid waste management facility on the site.

Interested persons are invited to submit written comments on the plan or request modifications of the plan or provide information on the release, at any time, of hazardous waste constituents from the facility, within 30 days of the first publication date of this notice. Written comments must be addressed to the IEPA, Government & Community Affairs, Attn: Stan Black, 2200 Churchill Road, P.O. Box 19276, Springfield, Illinois 62794-9276.

The site must be closed in accordance with the standards set forth in the Environmental Protection Act, Ill. Rev. Stat., Ch. 111 1/2, Pars. 1001 et seq., and regulations adopted thereunder.

The proposed closure plan, closure performance requirements, and other documents are available for inspection and may be copied at the IEPA's Springfield headquarters. There is no charge for the first 400 pages copied. There is a 25 cents charge for each page copied over 400.

An appointment to inspect the proposed closure plan must be made in advance by contacting the Division of Land Pollution Control, Freedom of Information Act (FOIA) coordinator at 2200 Churchill Road, P.O. Box 19276, Springfield, Illinois 62794-9276, 217/782-6760. Please refer to the closure number under the heading at the top of this advertisement when contacting the FOIA coordinator.

In response to requests or at the discretion of the IEPA, a public hearing may be held to clarify one or more issues concerning the closure plan. Public notice will be issued 30 days before any public hearing.

AM/mls/2474n/24-25